

# The Boston Medical and Surgical Journal

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### Original Articles.

#### FRACTURE OF THE NECK OF THE FEMUR.

By JAMES WARREN SEVER, M.D., BOSTON,

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[From the Orthopedic Service at the Cambridge Hospital, Cambridge, Mass.]

THIS paper is presented with the idea first of offering certain data in regard to a number of cases of hip fractures studied by the author, and secondly, to bring before the medical profession certain facts in regard to the modern theories as to how this type of fracture should best be treated.

For several years now we have been assailed, first on one side and then on the other, by advocates of the plaster spica applied with abduction, by others who believe that abduction alone is not enough, but that artificial impaction must be used to insure a good result and that really abduction is not the *sine qua non* of success, and by others who believe that flexion at the hip and fixation in plaster in that position is the most essential way to bring about a good result. We have offered us, also, Buck's extension with and without lateral traction and extension by the

ice tongs method; also various operative procedure to fix the fragments by a nail or bone peg; and lastly, sand bags alone. Which way is the average man to turn, and what should be considered good advice and treatment? If it were his own hip what would he allow any surgeon to do with him?

It seems to me that it all comes down to a basis of common sense and a reasonable amount of anatomical knowledge plus a knowledge of what a hip fracture looks like in an x-ray before and after treatment as well as a visualization of the fracture itself *in situ*, and the relation of the fractured surfaces before, during, and after manipulation. Two other factors are of importance; first, surgical training and conscience in regard to what constitutes adequate treatment of any fracture; and second, the general condition of the individual patient whose condition, often in these cases, precludes any active treatment.

It will be my endeavor in this paper to discuss these various points so as to make clear to the reader just what I have in my own mind in regard to this type of fracture.

In the series reported in this paper there are 40 cases. Twenty-one of these are the so-called intertrochanteric type or those involving one or both trochanters, and the so-called sub-capital type where the fracture is located near the base

of the head at its junction with the femoral neck. Both types of cases require treatment, not radically different and apart from such circumstances as old age, obesity, and general weakness, essential to a result which should be better than is usual. Most hip fractures are neglected, and by that I mean, the case is not adequately treated. The reason for this, I believe, is that in the past we have all thrown up our hands at such cases and have been led to expect a bad result because we have always had them. The time has come for a change, and while a certain proportion of cases will have to be content with sand bags or even no treatment at all, others, who would in the past have also had nothing but sand bags, will and should have at least an anatomical chance to get a fair result on the same basis as any other fracture is treated.

In looking at the results of this series of 40 cases, there are only 9 which could be classed as good or fair; that is, these people have legs which they can walk about on and do their work without great discomfort or limp. This is approximately 23 per cent. Five were sub-capital fractures and four were of the intertrochanteric type. Of the sub-capital type, one was treated by sand bags, one with Buck's extension and three by the Whitman abduction method. Of the intertrochanteric type, one was treated by Buck's extension and later with a plaster spica, and three with sand bags alone. The average age of all the patients was 61 years, the youngest being 14 and the oldest 88 years. Three cases of sub-capital fracture in this series of 40 were forcibly impacted by Dr. Cotton by his method and the results are known in two of the cases. They are not classified in the nine known good results. (See table II, cases numbered 2, 23, 36.)

A further analysis of these cases classed as good results is shown in Table I.

TABLE I.

CASE	AGE	SEX	TYPE
1	14	F.	Sub-capital
17	47	M.	Sub-capital
18	60	M.	Sub-capital
19	24	M.	Intertrochanteric
33	73	F.	Intertrochanteric
37	14	M.	Sub-capital
39	18	F.	Sub-capital
32	73	F.	Trochanteric
25	78	F.	?

This shows five females and four males of all ages. From so small a number it would be obviously unfair to draw any deduction as regards types or ages as to what results should generally be expected.

A further study of the table will show that of the intertrochanteric type of fracture, 12 were treated alone by sand bags, 4 had the advantage of Buck's extension, two had a plaster spica, and two had a spica with extension. Of the sub-capital type four were treated by the Whitman abduction method, 7 by sand bags, three by the Cotton artificial impaction, and one by Buck's extension. The results have been noted above.

## SUB-CAPITAL FRACTURE.

What are the anatomical relations following a fracture of the neck of the femur near the base of the head? The trochanter is dropped back of its usual level as well as displaced upwards, the dropping back takes place because the thigh occupies a higher or more forward position than the trunk when intact, but when broken the trochanter drops back from gravity alone, thus displacing the distal fragment behind the head of the femur. The carrying upward of the trochanter is due alone to muscle pull from unopposed muscles. The next deformity observed is that of outward rotation which is due in part to the shortening of the leg and the pull of the muscles, particularly the psoas and iliacus. The leg is also adducted, due to the strong pull of the unopposed adductor muscles.

The position is practically the same in complete and impacted fractures of this type, except that the trochanter is not apt to be quite as high or the shortening as great in the latter type. Following a complete sub-capital fracture an examination of the hip joint by inspection of the fresh fractured surfaces would show the following conditions. The distal fractured surface would lie well above and behind the level of the acetabulum and pointing inward and forward. The head would lie in the acetabulum, directed generally outward and forward and well in front of the neck. Obviously, to get these two surfaces together and hold them there would give one the best possible anatomical result so far as could be obtained. The question is how to do this.\* First of all the shortening should be corrected by traction under ether so that with the pelvis held and square, the legs measure equally. Then the good leg is abducted fully and held in that position. The fractured leg is then abducted to its limit, about 45 degrees, meanwhile lifting the

\* Whitman method.

trochanter upward, forward and inward so that it resumes its place at its normal level with the head. This is essential and it is also essential that the trochanter be supported during and after the application of the plaster spica. The rotation is corrected at the same time. The plaster is applied from the toes to the nipple line on the fractured leg and part way down the thigh on the good leg to insure stability. All this sounds easy, but it is not. Personal observation of fresh sub-capital fractures in the dissecting room have shown me that to get these two fracture surfaces in apposition by this manipulation alone is difficult and not always certain.

First of all adequate traction is needed and it is essential that it be maintained during the entire procedure. As the distal fragment comes down and is lifted forward it is apt to engage the edge of the head and carry it as a whole before it. The head is not firmly fixed in the acetabulum and rotates easily in any direction which makes it doubly difficult to insure good approximation of surfaces. It also leads one to wonder what happens when artificial impaction is practised. Rotation also has had the same effect on the head. Inspection under these conditions, however, does show that full abduction plus adequate traction does make the lower border of the capsule tight and brings the fractured surfaces in as good apposition as possible and holds them there, which is after all what is wanted. Never be afraid to abduct too far, for it cannot be done so as to do any harm, provided the length is maintained and the trochanter lifted well forward. The mere maintenance of the extreme abduction is enough to insure as good approximation of the fractured surfaces as can reasonably be expected as well as restoring as far as possible the normal anatomy of the femoral neck. No other fixation by any other method could do much more. The development of callus along the line of fracture is another matter and is not in the surgeon's hands. In this way the normal angle of the neck is restored as well as possible and by no other way. Artificial impaction before abduction simply fixes the leg in adduction, which is a bad deformity and constitutes a real disability and, to my mind, should not be practised. Therefore I feel that any hip showing an original impaction should be broken up and an anatomical position established in order to offer the patient the benefit of as good a result as

possible on scientific lines. Letting an original impaction alone results, if union is obtained, in a short, adducted and outwardly rotated leg, which should be avoided. I believe in the majority of cases, other things being equal, the results will be better if the impaction is broken up. Impaction after abduction offers nothing but more shortening of the already shortened neck and does not insure better results. Here again a visualization of the relation of the fractured surfaces is necessary and should be enough to hold one's hand.

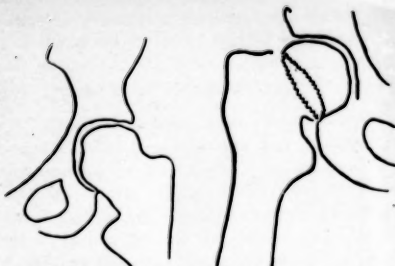
#### INTERTROCHANTERIC FRACTURES.

This class of cases represents usually the larger class and generally no trouble is found in obtaining union on account of a better and more adequate blood supply. Here again the abduction method is the one to use "par excellence," and is the only one by which the deformity may be corrected. The deformity usually is about the same as seen in cases of sub-capital fractures, but the line of fracture is through the trochanter and along the intertrochanteric line. The patients have suffered in the past from the same apathy on the part of the medical man as have the others and really offer a better field for good results. The treatment is generally more simple, abduction alone generally results in an excellent position. There seldom being much or no over-riding or much displacement. There is, of course, the lessening of the normal angle of the neck with the shaft, resulting in the typical coxa vara deformity. All these cases should be kept in the plaster eight to twelve weeks to insure good union. The great difficulty in obtaining a good union and therefore a good result in cases of fractures of the sub-capital type is the poor circulation of the head of the femur, which is an important factor. Lexer's study of the blood supply to the neck of the femur has shown that the blood enters it at four points, all of which arteries reach the bone by way of the periosteum and the capsule. "This distribution was later more completely worked out by Waldenström" (to quote from Legg's paper) by means of vascular injections of crude turpentine and mercury. The radiographic study of these injected femora established the occurrence of (a) a vessel to the upper neck entering just above the great trochanter and giving a branch to the epiphysis

\* See Osteochondral Trophicity of the Hip Joint. Arthur T. Legg, Surg., Gyn. and Obstet., March, 1916.



FIG. 1.—Adopted from Waldenström. A, Upper diaphyseal vessel giving a branch B to epiphysis; C, vessel entering through the ligamentum teres; D, branch to the lower side of the epiphysis; E, diaphyseal vessel to the lower side of the femoral neck.



CASE 1.—Seventeen months after fracture. Infantile paralysis. Whitman abduction method. Twelve weeks of plaster.

CASE 2.—Showing sub-capital fracture. Age 25. X-ray taken 2 weeks after accident. Cotton impaction. Result not known.



CASE 3.—Sub-capital fracture. Treatment: Whitman abduction method. See later x-ray.



CASE 9.—Six weeks later in plaster. Result not known.



CASE 13.—Intertrochanteric fracture. X-ray taken day after accident. Result not known.



CASE 14.—Intertrochanteric fracture. Too fat for spica. Extension in abduction used without good result.



CASE 15.—Intertrochanteric fracture. Treated by sand bags and later by spica for five weeks. Subsequent result not known.



CASE 18.—Sub-capital fracture. Buck's extension for eight weeks. Excellent result. See table.



CASE 19.—Trochanteric fracture. Excellent result. Buck's extension and later plaster spica. Man in army.



CASE 21.—Intertrochanteric fracture. Sand bags for 9 weeks. Age 67. For result see table.



CASE 27.—Intertrochanteric fracture. Sand bags for 9 weeks. Age 65. Result not known.



CASE 26.—Intertrochanteric fracture. See table.



CASE 28.—Intertrochanteric fracture. Sand bags. Dead.





CASE 29.—Sub-capital fracture. Dead.



CASE 34.—Intertrochanteric fracture. Buck's extension 6 weeks. Result not known.



CASE 39.—Before reduction



CASE 39.—In plaster.



CASE 35.—Intertrochanteric fracture. Sand bags. Eight weeks. See table.



CASE 39.—Six months later. Good functional result. A recent plate shows practically the same condition.



CASE 37.—Result good as to function. See table. Whitman method.



CASE 37.—Original fracture—sub-capital. Nov. 30, 1916.



CASE 38.—Sub-capital fracture before reduction. Age 60.



CASE 38.—Treated by sand bags alone. Fair result anatomically. See table.



CASE 40 (No. 1).—Age 77. Intertrochanteric fracture before reduction. Jan., 1918.



CASE 40. (No. 2).—After reduction in plaster. Died May, 1918. Never out of bed.

NO.	DATE OF INJURY	AGE	SEX	OCCUPATION	TYPE OF FRACTURE	TREATMENT	TIME IN BED	DEFORMITY Permanent	RESULT AS FAR AS KNOWN	COMPLICATIONS
1	JAN., 1917	14	F.	School	Sub-capital	Abd. in plaster Whitman	3 months	None	Excellent	Old infantile paralysis with coxa valgum which the fracture was slowly corrected. See X-Rays.
2	June 26, 1916	25	F.	Housewife	Sub-capital	Cotton impaction cast	8 weeks	1 1/4" short	Not known	
3	April 27, 1914	88	F.	None	Sub-capital	Sand bags, 4 weeks Cast, 3 weeks	7 weeks	Leg 1" short and everted	Died at age of 91. Walked a little with a crutch and had constant pain	
4	May 12, 1915	88	M.	None	Trochanteric	Sand bags	7 weeks	Leg 1" short and everted	Died March, 1917. Result not known	
5	July 31, 1912	84	F.	None	Sub-capital	Sand bags	6 weeks	1" short and everted	Not known beyond immediate result	Discharged to tuberculosis camp on account of pulmonary tuberculosis
6	April 28, 1916	72	M.	None	Sub-capital	Sand bags	4 weeks	1 1/2" short	Died Feb., 1918, age 75, walked with 3/4" high sole, slight limp and crutches	
7	July 26, 1914	84	F.	None	Sub-capital	Sand bags	11 weeks	1 1/4" short and everted	Not known	
8	March 18, 1915	63	F.	None	Sub-capital	Sand bags	8 weeks		Not known	
9	July 23, 1912	59	F.	—	Sub-capital	Whitman abd. cast	10 weeks		Not known	See X-Ray before and after reduction
10	Feb. 2, 1917	68	F.	None	Intertrochanteric	Sand bags	10 weeks	1" short	Good union—good motion except in abduction	
11	Jan. 5, 1914	53	F.	—	Intertrochanteric	Sand bags	8 weeks	1 1/2" short	Not known	
12	Feb. 10, 1913	43	M.	Teamster	Intertrochanteric	Plaster spica in abd.	8 weeks		Good union, otherwise result not known	
13	Nov. 9, 1913	47	F.	Housewife	Intertrochanteric	Buck's extension	7 weeks		Jan. 22, 1914. No shortening, no other note	See X-Ray.
14	April 5, 1917	55	F.	Housewife	Intertrochanteric	Buck's extension	10 weeks	1 1/4" short	Leg everted, some limitation of motion at hip. Slight limp	Too fat for cast. See X-Ray
15	Nov. 5, 1915	74	M.	None	Intertrochanteric	Sand bags and later spica for five weeks	9 weeks	1 1/2" short	Limp and outward rotation of leg	

No.	Date of Injury	Age	Sex	Occupation	Type of Fracture	Treatment	Time in Bed	Disability	Result as Far as Known	Complications
16	Jan. 6, 1916	69	F.	—	Sub-capital	Sand bags	9 weeks		1½" shortening. Adducted and outward rotated. Limp, no pain in leg, cannot walk, uses crutches. Feb., 1918.	
17	June 30, 1912	47	M.	Laborer	Sub-capital	Sand bags	7 weeks	½" short	Began to walk on leg about two months after leaving hospital. Limps very little, wears a ¾ of an inch lift on heel, can walk three or four miles without trouble. Stands on feet all day very day	
18	Aug. 23, 1914	60	M.	Janitor	Sub-capital	Buck's extension	8 weeks		Began to walk about four months after leaving hospital. Is about on leg all the time without pain or limp	
19	Dec. 17, 1915	24	M.	Carpenter	Trochanteric	Buck's extension and splin	4 weeks	¾" short	This man writes Feb., 1918, that he is in the army, could not walk on leg for five months after leaving hospital and could not work for a year. Limps a good deal if he walks any distance. Has a good deal of pain in leg. See X-Ray.	
20	Nov. 18, 1914	72	M.	—	Intertrochanteric	Sand bags	9 weeks		Dead from other causes.	Result not known
21	Feb. 17, 1915	67	M.	—	Intertrochanteric	Sand bags	8 weeks		Result not known	See X-Ray
22	March 22, 1917	86	F.	—	Intertrochanteric	Sand bags	9 weeks	1½" short	Could not walk at discharge from hospital June 5, 1917. Had to stay in bed two months after leaving hospital. Put weight on leg for first time in Oct. 1917, uses cane only now. Feb. 1918. Has about 2 inches shortening. Able to walk with cane or crutches.	
23	June 19, 1916	61	F.	—	Sub-capital	Cotton impaction plaster	11 weeks	?	Used crutches Oct. 28, 1916. Patient writes Feb. 11, 1918, that she wears a ½" lift on shoe, walks about home a good deal but with considerable limp and uses cane. X-Ray not to be found.	
24	May 21, 1916	63	F.	—	Sub-capital Impacted	?	Aug. 7, 1916		Patient writes Feb., 1918, that she was operated on by Dr. Brackett March 28, 1917, on account of a loose fracture of the neck of the femur. Was in a cast to Sept., 1917. Since then has worn a leather splin. She is now getting weight on the leg and states X-rays show slight union.	
25	June 23, 1914	78	F.	—	?	Buck's extension to July, cast applied and off in 2 weeks			Walked Sept. 10, 1914 with crutches for 6 months and then used one for a year. Now able to walk and go up and down stairs. Inmate of City Poor Farm.	
26	April 20, 1915	56	M.	—	Intertrochanteric	Sand bags and Buck's extension	9 weeks		Discharged walking July 8, 1915. No other results known. See X-Ray.	
27	Nov. 8, 1916	65	F.	—	Intertrochanteric	Sand bags		¾" short	Discharged Dec. 24, 1916. Not walking. No other results known. See X-Ray.	

No.	DATE OF INJURY	AGE	SEX	OCCUPATION	TYPE OF FRACTURE	TREATMENT	TIME IN BED	DISABILITY Permanent Partial	RESULT AS FAR AS KNOWS	COMPLICATIONS
28	Nov. 20, 1915	53	F.	—	Intertrochanteric	Sand bags			Died in hospital Feb. 4, 1918	See X-Ray
29	Oct. 13, 1914	76	M.	—	Sub-capital	None		1" short	Marked eversion and shortening. Died in hospital Nov. 3, 1914. See X-Ray.	
30	Aug. 19, 1915	76	M.	—	Intertrochanteric	None			Died August 25, 1915.	Pneumonia
31	Dec. 21, 1912	85	F.	—	Intertrochanteric	Bed			Died Dec. 30, 1912.	
32	Feb. 2, 1917	73	F.	Housewife	Trochanteric	Sand bags	12 weeks	¾" short	Feb. 1918, writes that she walked with crutches in May, 1917, in July, 1917, with cane, and in Nov., 1917, without cane. Left leg outwardly rotated, flexion at hip to a right angle, outward rotation free, inward rotation limited, abduction limited.	
33	May 1, 1917	73	M.	—	Intertrochanteric	Sand bags	8 weeks	¾" short	April 25, 1918. Walks with a limp, legs lie outwardly rotated, motion in flexion to a right angle, abduction limited.	
34	Aug. 1, 1914	80	M.	—	Intertrochanteric	Buck's extension	6 weeks		Not known. See X-Ray.	
35	Nov. 23, 1912	59	F.	Housewife	Intertrochanteric	Sand bags	8 weeks		Discharged from hospital Feb. 18, 1913. Was in hospital about 15 years before for fracture of other hip. No results known. See X-Ray.	
36	Feb. 12, 1916	51	F.	Housewife	Sub-capital	Cotton impaction Feb. 18, 1916; Cast off May 15, 1916			Discharged June 21, 1916. Writes Feb., 1918, that she did not walk on leg for about a year, limps a good deal, uses crutch and states leg is about 2 inches short. Is not able to do any work. Has some pain in leg.	
37	Nov. 19, 1916	14	M.	School	Sub-capital	Whitman Nov. 23, 1916; Cast off Jan. 8, 1917.	8 weeks		April 18, 1918. ¾" short, good motion in flexion, abduction and adduction, slight limitation in inward rotation. No limp or pain. Working every day. See X-Ray.	
38	Jan. 18, 1916	60	F.	—	Sub-capital	Sand bags	?		Writes Feb., 1918. Uses two canes, limps badly, wears a ½" high heel. Not able to get out of doors. See X-Ray.	
39	Dec., 1917	18	F.	Tel. operator	Sub-capital	Whitman abd. cast on 12 weeks			July, 1918, walks in Thomas splint leg ½" short, still slight limitation of motion at hip and slight permanent outward rotation. Has not walked yet without splint. Has no pain. X-Rays show apparent union. See X-Rays.	
40	Jan. 11, 1918	77	F.	Home	Intertrochanteric	Whitman abduction cast, 3 weeks	5 months	Total	Died in hospital, May, 1918.	

of the head, (b) a vessel on the under side of the neck, (c) a small vessel to the under portion of the epiphysis similar in distribution to the epiphyseal branch of (a) above, and (d), a vessel of small size and limited ramification on passing into the epiphysis through the ligamentum teres." (See cut.)

"Lexell states that the blood supply is greatest in childhood, and that in adult life the most marked change is seen in the diaphyseal group of arteries supplying the shaft, which become smaller and smaller with advancing age." The fracture must consequently have a profound effect on the circulation of the head fragment, which is practically cut off by the loss of continuity of bone."

The more accurate bone approximation obtained by manipulation and fixation the better chance consequently for a good result. Any thing short of that merely insures a bad result.

#### X-RAY INTERPRETATION

The study of any number of x-rays of hip fracture will show that they are most difficult of accurate interpretation. Knowing the anatomical relation of the fragments, the x-ray will give one the impression that the parts are in apposition or even impacted. The overriding and displacement will not be clearly shown, and only by careful stereoscopic plates, or even by lateral views, a method much neglected and not well developed, will the true relation be brought out. One should not place too much reliance on x-rays alone, but x-rays plus clinical findings will give one a better idea of what the actual conditions are.

#### SUBSEQUENT TREATMENT.

The subsequent treatment of these cases is of no small importance. After the bed treatment is over, the patient should be fitted with a Thomas splint, jointed if necessary, at the knee and fastened into the shoe, so that when the patient puts the foot to the ground the weight of the body will be carried by the splint and not on the hip joint. At first this splint is to be used with crutches but later they can be dispensed with. The splint should be worn at least six months in any case where union is suspected. It is, of course, taken off at night.

† Fracture of Neck of Femur. A. McGilman, Surg., Gyn. and Obstet., March, 1916, Vol. xxii, No. 3.

In the old cases of fracture of the hip, that is, those cases not alone old in point of years but in time since the injury and showing no union, the problem, I believe, has best been answered by Dr. Brackett, who has devised a method of inserting the end of the great trochanter, after remoulding it, into the atrophied head, which is *in situ*. It is an operation, of course, only for selected cases, but certainly offers a good deal, and in his recent paper he reports nine cases with seven good results.†

This paper is really an effort to arouse the medical profession to a greater interest in this class of cases. The results in practically all series of cases reported are bad, as a whole. The treatment has been bad, and while the results are bad, they should show a better per cent. of good results than we have had up to the present if, in the future, the cases will be treated on an anatomical basis and the patients given a chance, providing their general condition and age warrant it.

#### EXPERIENCE OF MASSACHUSETTS STATE SANATORIA FOR TUBERCULOSIS DURING THE RECENT INFLUENZA EPIDEMIC.

By JOHN B. HAWES, 2ND, M.D., BOSTON.

At a meeting of the Board of Trustees of Hospitals for Consumptives, held September 10, 1918, I called the attention of the trustees to the epidemic of influenza then prevalent among the naval forces situated in Boston, and urged that every possible measure be taken by the superintendents of our State sanatoria to prevent a spread of the disease among the patients at these institutions. The fact that there are four large sanatoria for consumptives under the control of this Board, the North Reading, Lakeville, Westfield, and Rutland State Sanatoria, comprising a total of 1065 patients, and a total population, including employees, of 1512, made it very important to take measures in this regard. Now that the epidemic in Massachusetts is practically over, it has seemed to me that a brief description of the experience of our

‡ Treatment of Old Ununited Fracture of the Neck of the Femur by Transplantation of the Head of the Femur to the Trochanter. E. G. Brackett and W. J. New, BOSTON MEDICAL AND SURGICAL JOURNAL, Vol. cxxxvii, No. 11, September 18, 1917.



Massachusetts State Sanatoria in preventing as far as possible the outbreak of influenza among the patients, and its control among those patients who contracted it, will be of some interest and value.

The superintendents of our four State sanatoria have very kindly given details of the measures they each took.

#### NORTH READING STATE SANATORIUM.

At the beginning of the outbreak Dr. Carl C. MacCorison, Superintendent of the North Reading State Sanatorium, cautioned patients and employees, and advised them how to avoid infection, and suggested strongly that they remain close to the institution. When the epidemic began to assume serious proportions a strict quarantine was established. This meant that patients were not allowed to see visitors, and were forbidden to leave the grounds. In several instances the relatives of patients died, and the patients felt that they must go home. These people are still at home with the understanding that they can be re-admitted when conditions are safe. With the employees the quarantine was less effective. Each employee was asked to remain at the institution unless it was absolutely necessary for him to leave, in which case he was to report immediately to the physician on his return. For the most part the employees coöperated very well. A few did pretty much as they pleased, and these were watched carefully. Dr. MacCorison feels that the patients appreciated the fact that their interests were being safeguarded, although toward the end of the quarantine they became restive, and asked for leaves of absence, and that their relatives might see them, which was, of course, perfectly natural.

Seventy-two employees received Dr. Leary's vaccine. This included the prison laborers. One prisoner received the vaccine twice, but refused the third dose, and he is the only person receiving the vaccine that later came down with influenza. No patients were given the vaccine. There were several employees sick with very mild symptoms of questionable influenza, but the symptoms were more those of a cold. With the exception of one man, the cases at this institution were very mild.

#### LAKEVILLE STATE SANATORIUM.

Dr. Sumner Coolidge, superintendent of the Lakeville State Sanatorium, excluded all vis-

itors from the sanatorium during the period of quarantine, except the friends of the various sick ones, who were seen in private rooms. Patients and employees were advised to avoid close personal association and to avoid droplet infection. Leaves of absence for patients were discontinued. It is interesting to note that there was no case of influenza among the patients, nor among the employees living at the sanatorium. This may well be looked upon as a remarkable record for which Dr. Coolidge is to be congratulated.

At Lakeville, 49, or one-half the employees, were vaccinated. This took in the entire nursing force, office force, engine help, one clergyman, medical staff with one exception, herdsman and two of his family, yardman and laundryman. Dr. T. J. Leary's vaccine was used. The following were not vaccinated: All male waiters, four laundry employees, five engineers, the entire farm help, including ten prisoners, and all the patients. There was no case of influenza among the patients, nor among the employees living at the sanatorium. Among the employees living in their own homes, however, there were seven severe cases, two doubtful cases, and among the families of these employees, living at their homes, there were three deaths.

#### WESTFIELD STATE SANATORIUM.

Dr. Henry D. Chadwick, superintendent of the Westfield State Sanatorium, refused all leaves of absence, and allowed no visitors. The employees were requested to avoid going to town, and most of them heeded this regulation. The first cases were two employees, one of whom had returned from a vacation and the other from a visit to Boston. The first ward case was a boy from Gloucester admitted to the children's ward on September 21. Immediately after other cases developed in that ward, up to a total of 34, the last case being on October 1. In the girls' pavilion there were nine cases, evidently due to an attendant who came back from a vacation already infected, but with very slight symptoms. She worked two days in the ward before becoming sick enough to give up. For treatment Dr. Chadwick found tincture of aconite in doses of one to five minims hourly in the febrile state, and with children, combined with sweet spirits of nitre, was very effective.

There were four deaths at this institution from influenza, two children and two men, all

of whom had advanced tuberculosis. The vaccine was not used at Westfield.

#### RUTLAND STATE SANATORIUM.

Dr. Ernest B. Emerson, superintendent of the Rutland State Sanatorium, reports that the influenza began to show itself in epidemic form the week beginning September 15, the first case being an employee who had returned from a vacation. At this time there were 360 patients and 160 employees in the institution. A quarantine was immediately established. No patient was allowed to receive visitors unless dangerously ill, nor allowed to leave the institution. If necessary for him to leave the sanatorium he was not allowed to return. This quarantine was maintained until the epidemic subsided. At one time, Dr. Emerson and every member of his staff were ill with the disease.

The vaccine was given at the height of the epidemic, and the only cases developing afterwards were among those who had received the vaccine. Dr. Emerson does not believe that the vaccine had any effect. It appeared to him that the disease had about run out when it was given, and that those who were spared were more or less immune. The cases coming down after being vaccinated did not differ materially from the unvaccinated. He has not noted any material change in the tuberculous process in those patients who had influenza.

The fact that Rutland is reserved for incipient and favorable cases, the majority of whom are up and around, perhaps made his problem a little more difficult than at North Reading and Lakeville, where 80 to 90 per cent. of the patients are in the fairly advanced stages.

Two hundred and four of the patients at this institution were given three doses each of Dr. Leary's influenza vaccine; of these eight cases developed influenza, of which seven were mild, and one severe; all recovered. Fifty-nine employees were given three doses each of the vaccine; of these one case developed mild influenza. This gives a total, therefore, of nine cases of influenza, all mild but one, among 204 patients and 59 employees, who were given vaccine.

It is interesting to note that there were no

cases among the unvaccinated patients and employees after the 263 had been given vaccine. The only possible deduction to draw from this, as far as I can see, is that by this time the disease was well recognized to be in epidemic form, the dangers of its spread understood, and precautions taken against this. I do not see that this particular fact proves anything one way or the other concerning the efficacy of the vaccine.

It has been extremely interesting to me that the testimony of our superintendents and their assistants is that an acute influenzal attack, usually associated with broncho-pneumonia, of greater or less severity, has had remarkably little effect on the already existing tuberculous process as far as increasing its spread or its activity is concerned. In my own clinic at the Massachusetts General Hospital, as well as in my own private work, I am able to confirm this opinion.

The figures in regard to the occurrence of cases among patients and employees, use of vaccine, etc., are presented below.

I do not feel that one is able to draw any conclusions of particular value concerning the efficacy of influenza vaccine in preventing the spread of influenza. Dr. Emerson, of the Rutland Sanatorium, apparently seems to feel that it was of little or no value. Dr. MacCorison, of the North Reading Sanatorium, has figures which seem to show that it was of some help at least. My own opinion is that in no case did it do any harm, and that, perhaps, it did some good. At the Massachusetts General Hospital, by order of the Executive Committee, nurses and others who had received this vaccine were not allowed to go on duty in an influenza ward for a week after the first injection. The physicians in charge seemed to feel that there had been a larger number of nurses come down with the influenza shortly after receiving vaccine than ought to have been the case. In my own work I am not able to confirm this fact, nor does it seem logical to me, nor have the superintendents of our sanatoria been able to produce any confirmatory evidence in regard to this. Personally I would attribute it to the fact that these nurses were already infected at the time that they received the vaccine.

	TOTAL POP.	No. OF PAT.	No. OF EMP.	No. VACCINATED			TOTAL NO. CASES INFLU.			
				PAT.	EMP.	TOTAL	PAT.	EMP.	TOTAL	DEATHS
North Reading State Sanatorium	265	195	80	0	72	72	9	8	17	0
Lakeville State Sanatorium	357	259	99	0	49	49	0	0	0	0
Westfield State Sanatorium	370	265	104	0	0	0	46	7	53	4
Rutland State Sanatorium	520	360	150	204	59	263	66	32	98	8

### COMPLEMENT FIXATION IN TUBERCULOSIS.\*

BY HARRY L. BARNES, M.D., WALLUM LAKE, R. I.,  
AND  
HARRY S. BERNTON, M.D., PROVIDENCE, R. I.

THE difficulty in distinguishing tuberculosis which is active from that which is inactive or from other diseases which simulate it, has led to attempts at complement fixation. This paper records our attempt at complement fixation in 279 patients of the State Sanatorium at Wallum Lake, R. I. The sera were brought to the State laboratory within 48 hours and in all but 30 cases within 24 hours. Three hundred and ninety tests were made.

#### TECHNIQUE.

**Patient's Serum:** The sera were inactivated in a water bath for one-half hour at 57°. One-tenth c. c. of inactivated serum was used.

**Antigen:** Tubercle bacilli were dried, powdered, and subsequently boiled with glycerine. One-tenth c. c. of a 1 to 25 dilution was used as the binding unit. This antigen prepared at the Trudeau Sanitarium was furnished us through the courtesy of Mr. Petroff.

**Hemolytic System:** The sheep cell-rabbit amboceptor system was employed with guinea pig complement. Two units of amboceptor determined by titration were used in the test.

The inactivated serum, antigen, complement, and amboceptor were kept in the water bath for one-half hour in one series and for one and one-half hours in a second series before the addition of the washed sheep cells. Incubation in the water bath was continued for one hour after the addition of the washed cells. The results were then noted. The tubes were kept in the ice-box over night for a second reading.

As the percentage of positive reaction was low, a new supply of antigen was obtained from Mr. Petroff and in 109 cases comparative tests were made from the old and new antigens, sufficient blood being taken from the patients at one time. The number of sera in which the two antigens gave a different reaction was 12, or 11 per cent. The old antigen gave 8, or 15 per cent. more positive reactions than the new.

#### RESULTS.

The number of cases in the several stages and

the percentage of each class giving a positive reaction is shown in the following table:

	CASES	PER CENT. POSITIVE
Stage I. . . . .	{ A 26 B 12 C 2	{ 0 25 0
Stage II. . . . .	{ A 32 B 123 C 13	{ 12 21 30
Stage III. . . . .	{ A 3 B 33 C 21	{ 0 36 57

The percentage of positive reactions to the test in the different clinical groups was as follows:

- In the 279 cases—21%.
- In 160 cases having t. b. in the sputum—28%.
- In 119 cases having negative sputum—10%.
- In 102 cases having fever over 100 within a month—31%.
- In 90 cases with pulse averaging over 100F—24%.
- In 20 cases in which a loss of 5 lbs. had occurred within the month preceding the test—20%.
- In 25 children 2, or 8%, were positive.

Results in cases having complication or something of special interest were:

CLINICAL DIAGNOSIS	COMPLEMENT FIXATION	
	Positive Cases	Negative Cases
Tuberculous adenitis . . . . .	—	3
" larynx . . . . .	4	10
" peritonitis, active . . . . .	—	2
" peritonitis, arrested . . . . .	—	1
" pleurisy with effusion . . . . .	—	2
Tuberculous empyema, discharging . . . . .	—	2
Tuberculous enteritis . . . . .	10	9
" fistula in ano . . . . .	—	3
" spine, arrested . . . . .	—	1
" hip joint . . . . .	1	—
" knee joint, questionable . . . . .	—	1
Tuberculous metastasizing bone . . . . .	—	1
" epididymitis . . . . .	—	1
" lung, healed 2 yrs. . . . .	—	2
" lung, healed 14 yrs. . . . .	—	1
Nontuberculous . . . . .	—	2
Tuberculous lung with diabetes . . . . .	1	—
" lung with asthma . . . . .	—	2

The fact that only 21 per cent. of the whole series was positive was disappointing and may have resulted from some unrecognized defect or technique. As we always have a considerable percentage of cases undergoing arrest and many children in the quiescent stage, a considerable percentage of negative reactions was to have been expected. Other observers have failed to get a high percentage of positive reactions. Brown and Petroff, for instance, got only 51 per

\* Read before the Rhode Island Medical Society, at Wallum Lake, Sept. 8, 1918.

cent. of positive reactions in incipient cases on admission and 80 per cent. in moderately advanced cases. As the test was negative in so many far advanced cases it is clear that a negative complement fixation test like a negative sputum test has no value in excluding tuberculosis. In favor of the test it must be conceded that the febrile and hemorrhage cases had from three to four times as many positive reactions as the quiescent children; the positive sputum cases three times as many reactions as the negative sputum cases; and the 1-A cases were all negative, while the 3-C cases were 57 per cent. positive. These facts indicate a general tendency for the test to point in the right direction. Possibly a new antigen may be found which will greatly add to the value of the test.

If we cannot depend on the test to indicate active tuberculosis when present, can we depend on active tuberculosis being present when the test is positive? A conclusive answer to this question would require autopsies and a great number of tests in healthy individuals as well as in quiescent cases and we did not have the healthy material available. As bearing on this point it should be noted that in the 11 patients having negative sputum but positive complement fixation, there had recently been laryngitis in one case, pleurisy with effusion in one case, hæmoptysis in two cases and febrile attacks in eight cases, none of the eleven cases being free from recent symptoms of active tuberculosis. This is strong evidence, if not proof, that, in these 281 cases, a positive reaction occurred only when active tuberculosis was present.

#### CONCLUSION.

As positive reactions to complement fixation occurred in only about 30 per cent. of progressive cases and in only 9 per cent. of negative sputum cases, the test was of slight diagnostic value in this series of cases.

### Medical Progress

#### RECENT PROGRESS IN NEUROLOGY.

By ISADOR H. COMAT, M.D., BOSTON.

##### THE NEUROLOGY OF EXOPHTHALMIC GOITRE

As a result of investigations in visceral neurology, F. M. Pottenger (Endocrinology, Vol. 2,

No. 1, 1918) was impressed with the unsatisfactory theories which had been offered to explain the clinical nervous phenomena which accompanied exophthalmic goitre. The disease in the past had been approached from much too narrow a standpoint, attention having been centered too much on prominent symptoms. A broader discussion of the disease should comprise the vegetative nervous system, the central nervous system and the various glands of internal secretion.

Exophthalmic goitre is an extremely complex picture in which the clinicians have emphasized to too great an extent the exophthalmos, tachycardia and increased thyroid secretion, which are manifestations of irritation of sympathetic fibres. The real picture is that of a rapidly destructive metabolism dependent apparently upon the thyroid hypersecretion and its influence on the nervous system and other endocrine glands. The relationship of the three prominent symptoms, exophthalmos, tachycardia and thyroid hyperactivity is not at all clear. These may all be evidence of the same stimulation of the cervical sympathetic fibres, or the thyroid gland may be diseased primarily and the efferent impulses from it so irritate the nerve cells of the cervical sympathetic ganglia as to cause the marked stimulation of those motor neurons which supply the muscle of Müller and the heart and so cause exophthalmos and tachycardia.

If exophthalmos and tachycardia result from stimuli which emanate from the diseased thyroid, the synapse in all probability occurs in the cervical sympathetic ganglia, and the reflex would be the proof that the sympathetic ganglion cells have the reflex properties of the cells of the central nervous system.

There seem to be two predominant etiological factors in hyperthyroidism; deep emotions, sexual excitement and fear; the other, infections of the nasal sinuses and tonsils, alveolar abscesses and pulmonary tuberculosis. Concerning the latter, Pottenger has been impressed with the frequency with which an enlargement of the thyroid gland has been found in the early active stage of pulmonary tuberculosis.

Omitting the three localized cervical sympathetic symptoms, exophthalmos, enlarged and functionally hyperactive thyroid, and tachycardia and omitting also the increased activity of the adrenals, most of the common visceral symptoms of this disease such as von Graefe's



sign, excessive sweating, diarrhoea, etc., seem to manifest themselves in parasympathetic rather than in sympathetic stimulation. The variability of the symptoms seems to depend on the sensitizing influence of thyroid secretion upon nerve cells, lowering the threshold of response to nerve stimulation on the one hand, and to the natural, underlying, predisposing nerve tonus as described by the terms sympathicotonic and vagotonic by Eppinger and Hess and the relative tonus of these two divisions of the vegetative nervous system in different organs of the same individual.

While Pottenger's article was taken up with more strictly physiological and speculative questions, a recent paper by L. F. Barker (*J. A.M.A.*, Vol. LXXI, No. 5, 1918) discusses the nervous and mental symptoms in exophthalmic goitre from a clinical standpoint. The wide variability of the symptoms is clearly emphasized. Toxic degenerative processes involving the peripheral motor and sensory neurons are only occasionally met with, while palsies of the cranial nerves are far more frequent, such as ophthalmoplegias or the clinical picture of a bulbar paralysis, resembling a myasthenia gravis. Grosser lesions of the brain and spinal cord have occasionally been encountered in exophthalmic goitre, but in many cases the relation is only an accidental one. The evidence for an epilepsy of thyrotoxic origin is still too incomplete to permit of a safe judgment. The fine tremor which is so characteristic of exophthalmic goitre is probably of cerebral origin although its real pathogenesis cannot be explained any more than other pathological tremors.

Neurasthenic anxiety, phobic and obsessional states are frequent in cases of exophthalmic goitre, while the psychoses, particularly various forms of depression, are not uncommon. Even the mild cases of exophthalmic goitre show neurotic symptoms more or less clearly defined.

(One of the most common mental accompaniments of exophthalmic goitre seems to be a sort of undifferentiated depression. In many of the cases of anxiety neurosis or anxiety hysteria, one often finds symptoms which are extremely suggestive of hyperthyroidism, such as excessive sweating, tachycardia, fine tremor, dermatographia and slight exophthalmos. These symptoms are probably secondary to the extreme emotional reactions of psychoneuroses. In one case of exophthalmic goitre there was an extreme

muscular fatigue resembling a myasthenia gravis. This symptom disappeared after a successful thyroidectomy. In another interesting case the enlarged thyroid pressed upon the phrenic nerve causing a persistent and severe hiccup, which disappeared after removal of thyroid gland. The relation of the disease to the sexual glands is shown by its appearance during the menopause or its appearance and fluctuations during pregnancy. Concerning its emotional origin, we have seen the sudden appearance of exophthalmic goitre after an emotional shock, this being in harmony with our present knowledge of the effect of the emotions on the ductless glands and the internal secretions.—I. H. C.)

#### WAR AND NEUROSES.

In his capacity of psychiatrist to the Military Hospitals Commission of Canada, Clarence B. Farrar (*Am. Jour. of Insanity*, Vol. LXXIII, No. 4, April, 1917) makes some interesting and valuable observations on the war neuroses as observed in the Canadian Expeditionary Forces. In summing the effect of war on the central nervous system, he concluded as follows:

"Cases with gross lesions of nervous tissue, peripheral or central, present questions essentially surgical and neurological. Specific psychotic symptoms do not, as a rule, accompany them. In particular such lesions do not give rise to the so-called traumatic neuroses.

"Apparently any individual of sound constitution and inheritance may at the front exhibit minor, transitory neurotic symptoms which are strictly reactive and may be classed as physiologic.

"That the severe war neuroses may also, under certain circumstances, develop in persons apparently quite normal has been asserted by competent observers; but the concept of normal is so elastic that a definite answer to this question may never be forthcoming.

"It remains true, however, that in the majority of severe war neuroses of all types there is evidence of a personal element of psychopathic potential.

"The factor of exhaustion may lead to collapse or to acute transitory fatigue states, and if severe and protracted, to progressive physical deterioration. War has not established its etiologic importance in the neuroses or psychoses.



"Psychic disturbances among troops may be accidental, i.e., such as occur in the community generally, and cannot be attributed to the service; and reactive, those which stand in some specific relationship to the conditions of army life.

"The reactive group is made up essentially of psychoneuroses, which may be divided epochally into anticipatory neuroses, and trench neuroses.

The type of trench neurosis is the condition called 'shell shock,' which usually consists of a transitory concussion syndrome followed by a more or less protracted neurotic phase.

"Trench neuroses occur usually in unwounded soldiers. There is no satisfactory evidence that trauma plays any part in their causation. There are well-qualified observers who hold that as a result of contemporary military experience, the concept of the so-called traumatic neuroses should be abolished.

"The drift of opinion is unmistakably toward the psychogenic basis of war neuroses of all types, including shell-shock. Even in an initial unconsciousness or twilight state of some duration there is evidence that the psychogenic element may have as great if not a greater rôle than the item of mechanical shock, although this is also important.

"Clinically the trench neuroses present in the main hysteric and depressive-neurasthenic syndromes or combinations thereof. In this sense therefore there is nothing specific or new about them.

"Their distinctive character resides in the fact that the precipitating causes are unique and strongly color the symptom pictures; further in the conspicuous reactive motor phenomena, and in the more or less specific ideogenic moments."

By far the most fundamental contribution to the subject of the war neuroses, is a long paper by John T. MacCurdy, *Psychiatric Bulletin*, July, 1917). Here the war neuroses are interpreted from the psychoanalytic standpoint, as manifestations of unconscious factors immediately determined by conditions of modern warfare and having a symptomatology whose content is directly related to war. He objects to the picturesque and alliterative term of "shell-shock" from a purely medical standpoint, as in the first place it implies a single etiology, the physical effects of high explosive shells on the

central nervous, and secondly, the clinical types covered by this diagnostic term are too varied to be safely gathered under one heading. The National Committee on Mental Hygiene has also recently emphasized that "shell-shock" is not a medical term.

It is impossible to do more than briefly indicate the main theme of Dr. MacCurdy's paper. It will repay reading in the original since here is found, not vague clinical descriptions, but a minute psychological study of the war neuroses.

The two principal forms of the war neuroses are the anxiety states and the conversion hysterias. In the anxiety states, it is pointed out, and this observation can be confirmed by clinical experience, that the fear in the dreams of these individuals is always infinitely greater than the fear while awake in similar situations. Fatigue is a very important factor in the production of anxiety states. The part played by concussion in these conditions, he believes to have been over emphasized although its importance must not be under estimated in certain cases.

The conversion hysterias present certain difficulties of interpretation, although in all these cases an idea is transferred into a physical symptom. A difficult problem is to differentiate a conversion hysteria from malingering. In the former the symptoms are based on an unconscious wish, in the latter the wish is a conscious one. The treatment of the war neuroses is essentially symptomatic and psychotherapeutic. In its prevention, early rest after a campaign strain is emphasized, while individuals in civilian life who show neurotic tendencies and are ill-adapted to normal surroundings are very prone to develop a war neurosis.

(The fact that cases are often encountered in private practice showing the symptoms of so-called "shell-shock" and following accidents or emotional strain, shows that concussion from high explosives has been over emphasized or at least is only one of the factors in the production of a war neurosis.—I.H.C.)

#### CANCER IN THE CENTRAL NERVOUS SYSTEM.

In an experimental and clinical study of the metastasis of cancer in the central nervous system (*The Journal of Nervous and Mental Diseases*, Vol. VI, June, 1917) Levin gives the clinical record of six cases. From these he concluded that these metastases occur very early in the central nervous system and this in itself is an important reason for the failure of clinicians

to make an early diagnosis. A metastasis in the central nervous system may give no clinical symptoms during its entire course and it is even probable that those cases which ultimately develop severe clinical symptoms may have existed for a certain time without causing any manifestations attributable to the nervous system.

Benign tumors of the brain are encapsulated and during their growth compress the brain, increase the intracranial pressure and therefore produce early symptoms. Carcinoma and sarcoma grow invasively and destroy brain tissue during their growth, and consequently the combined amount of tissue inside the skull does change. Therefore no symptoms manifest themselves until a vital portion of the brain has been destroyed. The second and by far the more important handicap to the correct diagnosis of a metastasis in the central nervous system is due to the fact that the primary tumors may be so insignificant in comparison with the condition in the central nervous system that they escape recognition. In metastases of carcinoma of the spine the primary malignant tumor escapes notice even more frequently.

The very important conclusion to be drawn from the analysis of clinical cases of metastasis of carcinoma in the central nervous system is that the clinician must keep in mind the probability of cancer just as steadily as that of syphilis or tuberculosis.

(In some recently observed cases of carcinomatous invasion of the central nervous system from the primary focus in the breast, the metastasis took place in spite of a radical operation and prolonged x-ray treatment. In two cases the clinical symptoms pointed to a metastasis in the cerebellum, in the third the invasion was more extensive, involving with the cerebellum and the cortical sensory areas. In this case, although the symptoms of intracranial pressure were clear as manifested by headache and vomiting, yet the x-ray of the skull showed but little evidence of increased intracranial pressure. This observation harmonizes with Levin's statement.—I. H. C.)

#### THE PSYCHOANALYTIC TREATMENT OF THE PSYCHONEUROSES.

In order to meet the criticism which had been so often directed towards the psychoanalytic treatment of the neuroses, viz.—that there were

no statistics available showing the practical results of this method the same as in other departments of clinical medicine, Coriat (*The Psychoanalytic Review*, Vol. iv, No. 2, April, 1917) undertook to analyze ninety-three cases of various psychoneuroses and of certain psychoses which had been subjected to the psychoanalytic treatment. The figures were based entirely upon personal investigations and experience. So far as known, this is the first statistical study of psychoanalytic therapy.

Some of the cases were quite severe, while others were mild, but in a large majority of these cases other methods of treatment, such as drugs, rest, electricity, explanation and the various ordinary methods of psychotherapy had been tried in vain. In fact, in certain of these cases, considering the inefficiency of other therapeutic methods, it seems justifiable to state that the neurotic condition would have gone on indefinitely, had not psychoanalysis been utilized.

In the sexual neuroses, such as homosexuality, psychoanalysis was the only method which offered any hope of a cure or even an amelioration of the condition. In a large percentage of cases also, psychoanalysis was used as a last resort after other therapeutic procedures had been vainly tried.

The results in those cases where a complete psychoanalysis was done, were most gratifying and may be summarized as follows:—The cases to which psychoanalysis is applicable consists principally of the severe hysterias, the compulsion neuroses, the sexual neuroses, particularly homosexuality, stammering, the anxiety neuroses, and finally certain psychoses such as the paranoid states, manic-depressive insanity and the early stages of dementia praecox. In fact, concerning the latter, it was possible to record two recoveries out of five cases treated. (See Treatment of Dementia Praecox by Psychoanalysis—*Journal of Abnormal Psychology*, Dec., 1917). In these two recovered cases, not only did the mental symptoms disappear, but the social reaction became normal again after a long period of withdrawal from reality.

The largest percentage of recoveries was in homosexuality, while in stammering, which is really a severe form of anxiety neurosis, no complete recovery was recorded although all the cases showed a great improvement. In the anxiety and conversion hysterias the results were also gratifying, while the anxiety and compulsion

neuroses presented more serious difficulties in treatment.

The duration of treatment in the various neuroses varied from a month in the mild cases to four or six months in the more severe types. The psychoanalytic method is particularly applicable to those psychoneuroses which have failed to improve under any other procedure and it is the only method which penetrates to the fundamental basis of the neurosis and so effects a radical cure. Other methods merely teach or train the sufferer to evade his disturbance; psychoanalysis reaches the basis of the nervous disturbance and by so doing eliminates it.

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### Book Reviews.

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*Le Cabanon.* By DR. LUCIEN-GRAUX. Paris: A. Malone & Son. 1917.

This work deals with the various methods employed in the treatment of the insane, from the Middle Ages to the present day. The book is divided into two sections: the first is a historical account of the history of the cell; the second is composed of letters received from people whose opinions are of professional value, and who have been asked to contribute their ideas on this subject.

The first section shows the gradual transformation from the days when cells and dungeons were in vogue to the present time when the necessity of solitary confinement has been reduced to a minimum, and humane asylums have been instituted as a refuge. In the Golden Age, in Egypt, Greece, and Rome, the origin of the cell may be found. In the days of antiquity the affliction of madness inspired more respect and commiseration than terror, and the victims were confined in temples by the priests. The early Christian era set back the welfare of lunatics. Religious Christians resorted to the funeral-pile and dungeons to drive the supposed devil from the soul of the madman. At the end of the Middle Ages there was no special establishment for receiving and taking care of the insane; they were placed in prisons with criminals and suffered the tortures of strait-jackets and chains. The first asylum was established in Sweden in 1305. Later, religious orders of Spain saw the asylum in existence in the Orient and in North Africa, and, in the Fifteenth Century, they instituted in Spain this custom of segregating the insane in a building solely for that purpose. Italy followed in the 16th Century and Germany, France and England accepted the reform a little later.

Not until the 17th Century did any feeling of philanthropy enter, and little was done to mitigate the horrors of the cells until the 19th Century. Then psychiatrists began to protest about the abuses of the system, and advocated reducing cases of solitary confinement to a minimum. They maintained that isolation aggravated the state of the patient and made him hostile, whereas humane treatment under intelligent supervision and in comfortable rooms tended to improve his condition.

Part 2 of the book consists of letters and extracts, setting forth the opinions of contemporary psychiatrists on the subject of isolation and confinement. Opinions may be divided into three classes: the first maintains that the cell is rarely, but sometimes, indispensable; the second, that the cell ought to disappear, but only when circumstances permit; and the third class believes that, from this time on, the use of the cell ought to be thoroughly condemned.

*Philistine and Genius.* By BORIS SIDIS, M.A., PH.D., M.D. Third edition. Revised. Boston: Richard G. Badger. 1918.

"Philistine and Genius" is a critical commentary upon our modern educational system. In the preface on current events, Dr. Sidis denounces the present age as a reversion to savagery of the most degenerate type, a condition for which education is chiefly responsible. This work is a scathing indictment of the spirit of philistinism which consumes the wealth and science of the nation for commercial and even barbarous purposes. Dr. Sidis appeals to the fathers and mothers of the country to control the early education and social environment of their children, instead of leaving the task of moulding the minds of future generations to the philistine-educator. Deceiving children about life and man by myths and fairy tales is conducive to the development of mental abnormalities in later life. The book is a plea for truth, for the recognition of evil and life's realities. Parents should foster originality and independence of thought by awakening the child's critical spirit, and by imbuing him with a love of knowledge, truth, art and literature. The book condemns the methods of our schools and colleges for repressing genius and aiming at mediocrity. To develop genius one must avoid routine, cultivate variability and the power of habit-disintegration. Dr. Sidis appeals to American parenthood to rescue the children from the rampant spirit of philistinism which dominates our educational system, by fostering the latent genius which exists in every child.

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## EPIDEMIOLOGIC STUDIES OF POLIOMYELITIS IN NEW YORK CITY AND THE NORTHEASTERN UNITED STATES.

THE studies made by officers of the United States Public Health Service upon the epidemic of poliomyelitis which occurred during 1916 in New York City and the Northeastern United States have been reported in Public Health Bulletin No. 91. The work in this epidemic developed along two lines: One group was engaged in the supervision of interstate traffic in relation to the disease and the notification of local health authorities concerning the movements of persons from the epidemic area; the other group conducted scientific investigations of the disease. This report is concerned with the epidemiological and statistical aspects of the work of the latter group.

A review of the history of poliomyelitis prior to 1916 shows, as the outstanding feature of its epidemiology, a recent and rapid develop-

ment of epidemic prevalence. Since 1868, when the first clearly defined epidemic was recorded, the recognized epidemics of this disease have increased in number of cases from a score to several thousands, in territory involved from a single village to whole states. This evolution has been steadily progressive, every few years witnessing an epidemic surpassing all previous experience, and it has gone forward in many countries, perhaps throughout the world. It appears, however, to have originated in Sweden or Norway, and to have been most marked in these countries and the United States. Since 1909, the first year for which any general mortality and morbidity statistics are available, poliomyelitis has figured each year in the mortality records of every state in the United States having a registration population of 500,000 or more. Prior to 1916, the highest prevalence recorded in any whole state was about 87 cases per 100,000 in Vermont, in 1914. In no other state or other population group of 500,000 or more had the prevalence reached 50 per 100,000.

As compared with this prevalence in previous years, incomplete data for the year 1916 show approximately 29,000 cases, with 6,000 deaths reported in the United States, of which number 23,000 cases, with 5,000 deaths, occurred in the northeastern states, in distinct relation to the New York epidemic, in a population of about 32,000,000. In New York City, in 1916, the disease reached a prevalence of 185 per 100,000 in a population of 5,600,000; in New Jersey, 134 per 100,000 in nearly 3,000,000 population; in New York State, exclusive of New York City, 78 per 100,000 in 4,670,000.

In certain of its features the epidemic of 1916 conforms closely to previous experience, while in others it is distinctly remarkable. The features which may be considered most remarkable are an extent and intensity beyond all previous experience, an origin remarkably definite as to time and place, a strikingly uniform radial spread from this focus with intensity progressively decreasing in proportion to distance from the center, and in general, a demonstrable mathematical regularity in its whole evolution.

The epidemic had a peculiarly well defined origin, during the latter half of May, in a certain locality in the Borough of Brooklyn; and its whole subsequent development bears a distinctly traceable relation to this origin. As to



its essential cause, the special conditions which led to the development at this time and place of such an extraordinary epidemic, nothing is known. In New York City the epidemic had reached its maximum by the second week in August, thence declining to a vanishing point about November 1. By this time the number of cases in the city had reached 9,345, with 2,243 deaths, a case mortality of 24 per cent. As is usual, the disease was confined almost exclusively to the child population, 79.2 per cent. of the cases being in children under five, and approximately 98 per cent. in those under 15 years of age. The case mortality was lowest in the age group one to four years, and progressively higher in each successive higher age group.

Outside of New York City the epidemic extended over an area of approximately 300 miles radius, including the states of New York, New Jersey, Pennsylvania, Delaware, Maryland, Connecticut, Massachusetts, Rhode Island, Vermont, New Hampshire, and Maine. Throughout this area the evolution of the epidemic was remarkably regular in that, with increasing distance from New York City, its development was progressively later and its total incidence in the population less, as demonstrated by comparison of successive concentric 50-mile zones. Comparison of rural with urban districts shows that in the rural districts a larger proportion of cases occurred in the higher age groups, suggesting a less general immunity of the older population than is found in metropolitan centers.

According to all available evidence, the extension of the epidemic was independent of such factors as mass infection of food, milk, or water supplies; racial origin and economic status of the population, and of the various environmental conditions systematically studied. Special studies of a possible relation between the spread of infection and the occurrence of some hypothetical epizootic among rats, cats, dogs, or other studies, were made, but were not, however, carried out on an extensive scale. In individual cases, contact, either direct or indirect, with a previous case of poliomyelitis could but rarely be established.

The following observations were made in this epidemic study:

1. That poliomyelitis is, in nature, exclusively a human infection, transmitted from person to person without the necessary interven-

tion of a lower animal or insect host, the precise mechanism of transmission and avenues of infection being undetermined.

2. That the infection is far more prevalent than is apparent from the incidence of clinically recognized cases, since a large majority of persons infected become "carriers" without clinical manifestations. It is probable that during an epidemic such as that in New York City, a very considerable proportion of the population become infected, adults as well as children.

3. That the most important agencies in disseminating the infection are the unrecognized carriers and, perhaps, mild abortive cases ordinarily escaping recognition. It is fairly certain that the frank, paralytic cases are a relatively minor factor in the spread of infection.

4. That an epidemic of one to three recognized cases per thousand, or even less, immunizes the general population to such an extent that the epidemic declines spontaneously, due to the exhaustion or thinning out of infected material. Apparently an epidemic incidence relatively small in comparison to that prevailing in an epidemic may produce a population immunity sufficient to limit definitely the incidence rate in a subsequent epidemic.

#### AN INFLUENZA BULLETIN.

At a time when the influenza epidemic is again presenting serious phases, the publication of an *Influenza Bulletin* by the American Public Health Association is particularly helpful. This pamphlet reviews the information available and suggests practical methods of prevention and relief. The micro-organism or virus primarily responsible for this disease, has not yet been identified and there is no known laboratory method by which an attack of influenza can be differentiated from an ordinary cold or bronchitis, or other inflammation of the mucous membranes of the nose, pharynx, or throat. Evidence seems conclusive, however, that the infective micro-organism, or virus, of influenza is given off from the nose and mouth of infected persons, and that it is taken in through the mouth or nose of the person who contracts the disease.

There are various means which may be adopted to prevent the spread of influenza. First of all, it is advisable to break the channels of communication by which the infective



agent passes from one person to another; this may be done by preventing droplet infection, by sputum control, and by supervision of food and drink. Rendering persons exposed to infection immune, or at least more resistant, by the use of vaccines, is a second method of prevention. The use of vaccines, however, has yielded contradictory and irreconcilable results. In view of the fact that the causative organism is unknown, there is no scientific basis for the use of any particular vaccine against the primary disease. A third preventive measure is to increase the natural resistance of persons exposed to the disease by augmented healthfulness. Physical and nervous exhaustion should be avoided by paying due regard to rest, exercise, physical and mental labor, and hours of sleep.

In order successfully to prevent the spread of infection, there must be an efficient organization to meet the emergency, providing for a centralized coördination and control of all resources. All facts regarding the epidemic should be secured by such methods as compulsory reporting and canvassing for cases. The public should be educated with respect to respiratory hygiene and warned of dangers which can be avoided. Laws against the use of common cups, and proper ventilation laws should be enforced. Non-essential gatherings should be prohibited; the wearing of masks should be made compulsory in hospitals and for all who are directly exposed to infection; patients suffering from influenza should be isolated.

Besides reviewing these preventive measures, this bulletin summarizes methods of relief and the facilities offered by field nursing, emergency medical service, and hospitals, and makes the following suggestions:

"In view of the probability of recurrences of the disease from time to time during the coming year, health departments are advised to be ready in advance with plans for prevention, which plans shall embody the framework of necessary measures and as much detail as is possible. Laws plainly necessary should be enacted and rules passed now. Emergency funds should be held in reserve or placed in special appropriations, which appropriations can be quickly made available for influenza prevention work.

"The probability that as an after effect of the influenza epidemic there will be an unusually high pneumonia rate for several years should be taken into consideration.

"Of measures for the control of the disease,

bacteriologic studies as to the nature of the organisms causing the primary infection and as to bacteria associations, new and improved procedures leading to the production and use of effective vaccines and curative sera, and the fresh air treatment of the infected, appear to offer most promise."

#### THE BOSTON METROPOLITAN CHAPTER OF THE AMERICAN RED CROSS.

The annual report of the Boston Metropolitan Chapter of the American Red Cross for the year ending in June, 1918, includes a general account of the activities and scope of the work of the organization. The activities may be grouped under three general heads: Administration, Relief Activities, and Development.

The Administration Department is divided into four divisions: shipping, purchasing, information, and finance. From December 5, 1917, to the end of the fiscal year, the shipping department shipped 1383 standard boxes. The purchasing department has procured all raw material and supplies—including cloth, gauze, yarn, stationery, and office supplies. The information department, besides answering various question asked by all kinds of people, has conducted correspondence between civilians of this country and enemy countries. The finance department has received \$155,596.25 from membership fees during the year; as this sum more than covers all administrative expenses, it has been possible to devote the entire amount contributed to the War Funds directly to the purpose for which it was contributed. The amount received by the Boston Metropolitan Chapter from the First War Fund was \$504,033.00; from the Second War Fund, \$250,000.00.

The Department of Relief Activities includes the Education Department, which has offered classes of instruction in first aid, home nursing, surgical dressings, and conversational French; the Volunteer Motor Service, which has given Hospital service, civilian relief, ambulance service, and aid in case of civil disaster; the Naval and Military Relief, which has been responsible for surgical dressings, canteen work, comfort kits, and base hospital service. The Department of Civilian Relief, responsible for covering disaster relief and home service, rendered valiant service at the time of the Halifax disaster.

The Development Department has conducted membership campaigns, supplied speakers for the Red Cross meetings, organized branches and auxiliaries of the Chapter, managed the Publicity Department, secured coöperation between various organizations, and has conducted benefits and entertainments.

The work of the Boston Metropolitan Chapter of the American Red Cross has been accomplished by the coöperation and unselfish service of thousands of people of all classes who have desired to serve a great and common cause.

### MEDICAL NOTES.

**MEDICAL CORPS ASSIGNMENTS.**—Captain Edgar W. West and Lieutenants Clyde W. Rice and S. B. Buck, of the Medical Corps, have been assigned to duty with the Narragansett Bay coast defenses. Lieutenant Harry N. Golden, also of the Medical Corps, has been sent to Fort Adams.

**VITAL STATISTICS IN BERLIN.**—The vital statistics of Berlin, the publication of which heretofore has been prohibited, are now available. They disclose the almost catastrophic effect of the war's privations on the people of Berlin.

The excess of births over deaths in 1913 was 12,766. In 1916 there was an excess of deaths over births of 4440 and there were 15,397 more deaths than births in 1917. These figures do not include the soldiers who died at the front or in hospitals. The total number of deaths in 1917 was 7000 more than the previous year, despite the fact that Berlin's population had decreased 70,000.

**PROMOTION OF NORTHAMPTON PHYSICIAN.**—Dr. Elmer E. Thomas, who has been serving for more than a year as an American surgeon with the English Expeditionary Forces on the Flanders front, has been promoted from the rank of first lieutenant to captain. Dr. Thomas went to Great Britain to serve in the United States armies, but so great was the English need of medical men that he was assigned for service with a Royal Liverpool regiment and was in all the hard campaigning in the Ypres and Flanders sectors.

**FRENCH WOUNDED FUND \$453,803.**—Kidder, Peabody & Co., treasurers of the American

Fund for French Wounded, announce that the total subscriptions to date amount to \$453,803.09.

**WORK OF THE ROCKEFELLER FOUNDATION.**—Dr. George E. Vincent, president of the Rockefeller Foundation, has announced that the organization, after diverting its activities for four years to war relief and army welfare work, in which it expended \$21,000,000, will immediately resume its work of attempting to eliminate disease in all parts of the world.

Major-General William C. Gorgas, until recently Surgeon-General of the United States army, will soon head an expedition of scientists to Central and South America to conquer yellow fever. He will be accompanied by five experts, and believes that by battling the disease at its source in these countries it can be exterminated in a few years. The organization will also begin a campaign to wipe out the plague in China and other countries of Asia.

The Medical University of Peking, China, being erected by the Rockefeller Foundation at a cost of \$6,000,000, will be opened not later than October, 1920. Another medical university will be built by the organization at Shanghai, China.

**NURSES NEEDED IN PORTLAND.**—The new outbreak of influenza in Portland, Maine, has become so serious that urgent calls have been sent out by the Red Cross for both professional nurses and those who have had only some training in home nursing.

In Auburn, Maine, there are over 200 cases of influenza and the schools have closed.

**INFLUENZA AMONG MONTANA INDIANS.**—It has been reported that hundreds of Indians on reservations in Montana have died from influenza. Many deaths were caused by drastic methods which some tribes used to combat the disease. Influenza patients, it is claimed, took hot water or vapor baths and then leaped into cold mountain streams.

**ESTIMATE OF DEATHS FROM INFLUENZA.**—There seem to be reasonable grounds to believe that 6,000,000 persons have died of influenza and of pneumonia in the past twelve weeks. This plague, therefore, is five times more deadly than the war, which it is estimated killed 20,000,000 persons in four and a half years.

Influenza has cost London 10,000 lives to date. Never since the Black Death has such a plague swept the world. In India alone it is estimated there were 3,000,000 deaths. In Bombay there were 15,000 and in Delhi 800 daily. The Punjab lost a quarter of a million. In Capetown 2000 children were made destitute.

Eighty per cent. of the natives of Samoa were infected. In Spain the visitation was terrible. Barcelona having 1200 deaths daily.

No medical authority is certain of any conclusion yet reached, but possibly a still undiscovered organism is involved. Possibly the increased virulence of the influenza bacillus is responsible. It was mild when it first started in Spain. It visited England in a mild form, then America, then returned to England in a severer type. Usually it first appeared at sea ports. The figures indicate the infection was by contact and not carried through the air.

#### CHANGES IN PRICES OF DRUGS AND CHEMICALS.

Many price changes have occurred in drugs and chemicals, but very few are important. Glycerin is weak and lower. Mercury declined \$2 per flask. Chloral hydrate crystals have been reduced by makers. Courmarin and menthol quotations are lower. Larger imports of cinchona bark caused the market to weaken, and holders of cascara sagrada made offerings freely at concessions. Botanicals are firm. Gingers and mustard seed are tending upward.

#### ANTI-TUBERCULOSIS FACILITIES IN ILLINOIS.—

Three years ago the State of Illinois had only one tuberculosis sanatorium. At the present time, forty such institutions either exist or are provided for. By the November State election of 1918, it was voted to provide county sanatoria and visiting nurse service for thirty-three counties.

**THE FRAMINGHAM DEMONSTRATION.**—In the December Bulletin of the National Tuberculosis Association, the following conclusions to be drawn from the Framingham Health Demonstration activities in reference to tuberculosis are summarized:

1. Tuberculosis exists to a larger extent in the average industrial community than had previously been supposed. This is borne out by the fact that in Framingham, during the year previous to the Demonstration, the ratio of known cases to deaths was 3 to 1, while in 1917, the first year

of the Demonstration, this ratio was 11 to 1. Further, on a basis of the examination drives the indications are that there exists in the community 21 cases to every death, including arrested cases. When the ratio is restricted to include only active cases the figure is 9 or 10 to 1.

2. Tuberculosis can be found if looked for. The people will take advantage of free, expert, medical examinations. During 1916 there were 40 known cases of tuberculosis in Framingham. The total number of cases under care in 1917 was 185. The total number of cases, including deaths, under observation and treatment from January 1, 1917, to November 1, 1918, was 295, including a number of cases being followed as still in the suspicious class.

3. Concentrated tuberculosis work will stimulate the reporting of cases. During the decade 1906 to 1916 the physicians of Framingham reported the annual average number of 13 cases. During 1917 the cases reported numbered 59.

4. The physicians are quick to take advantage of an expert consultation service. To date through the consultation service 53 cases have been discovered and placed under care.

5. At present about 10% of the known living cases are receiving treatment in institutions out of town; consequently the great majority of cases are under home observation. 50% of the total number of living cases under care at the present time (239) are arrested.

6. An investigation of the reliability of death certification by physicians in tuberculosis cases for the preceding decade showed that the stated mortality rate should be increased by approximately 22%, accounted for largely by transfers from incorrect certifications of tuberculosis cases, as pneumonia, bronchitis, etc. With these corrections the decade mortality rate was 121.5 per 100,000. For 1917 the rate was 99.

7. A certain number of cases (28 to date) constantly leave town to take treatment in other parts of the state or country. Many of these are benefited by the advice received and by the medical diagnostic work before leaving Framingham.

8. In view of the large number of arrested cases and slowly progressing advanced cases which an extensive campaign discovers, it has been necessary to devise a somewhat modified system of classification, recognizing in a more direct way the economic and social adjustments

which the working patient under nursing observation has to make. The headings in this classification are as follows:

Early

Incipient, early, moderately advanced

Advanced

Rapid, slow, stationary.

Convalescent

Arrested

Early, advanced

Cured

Lost

Dead

This chart, with the use of pins, is a functional chart, allowing for the shifting of individual cases from column to column as progress is indicated by frequent reexaminations.

9. The findings in Framingham as to racial factors bear out previous experience elsewhere namely, that the Italian race stock presents a low tuberculosis incidence, in contrast to high rates in French-Canadians, Irish and other race stocks. On the other hand the Von Pirquet skin reaction among children shows a high percentage of infection among Italian children, with a correspondingly low incidence of active disease.

10. The work thus far in Framingham has been largely diagnostic with emphasis on the discovery of cases and their proper classification. It is believed that the great majority of active cases has now been discovered. From now on efforts will be concentrated on treatment and follow-up, including nursing visits, x-ray examinations, reexaminations, etc. Incidentally, the knowledge of a large number of arrested as well as active tuberculosis cases, together with the fairly complete reporting of influenza cases in the recent epidemic, makes possible an interesting and promising study of the relationship of this acute respiratory disease to tuberculosis.

#### THE RED CROSS CHRISTMAS ROLL CALL AND THE NATIONAL TUBERCULOSIS ASSOCIATION.

—This year the Red Cross and the National Tuberculosis Association will cooperate in making the Christmas Roll Call for membership a success, and a part of the funds secured will be available for anti-tuberculosis work. Anti-tuberculosis workers may help in two ways: by working in the campaign and by becoming actual members. In the December issue of the National Tuberculosis Association *Bulletin*, the suggestions which have been sent to the anti-tuberculosis societies in the Atlantic Division

of the American Red Cross show how members of those societies can be of service. By coöperating with district chairmen of Red Cross chapters, by securing volunteer service of persons, groups, or organizations, by assisting in local publicity work by means of advertising and speaking, and by keeping the subject of tuberculosis before public attention at this time, it will be possible for anti-tuberculosis workers to aid in the campaign.

EXAMINATION OF 10,000 RECRUITS WITH DOUBTFUL HEART CONDITIONS.—In February, 1916, by desire of the War Office, the honorary medical staff of the National Hospital for Diseases of the Heart undertook to act as expert referees on all cases of doubtful cardiac conditions referred to them by the various recruiting boards of the metropolitan area.

In every case an exhaustive medical history was taken, inquiry was made into subjective symptoms complained of, and the ordinary clinical examination by inspection, palpation, percussion, and auscultation was undertaken. In addition to this the urine of every recruit was examined, the pulse, blood pressure, and the respiration was taken in the recumbent position before and immediately after a standardized piece of exercise, and again after three minutes' rest in the recumbent position. Each case was electro-cardiographed, and the heart was examined by means of the x-rays. As the result of these various methods of examination a diagnosis was arrived at, and the medical boards were advised as to the category for service for which, in the opinion of the examining physician, the recruit was fitted, the responsibility for the actual classification adopted necessarily resting with the medical board.

Up to January 14, 1918, 10,000 different recruits were examined, as well as 181 men already in the army, who were referred for opinion by army medical officers. As the result of this work, a large number of records have been accumulated, and it is felt that the material thus obtained, if carefully analyzed, may assist in elucidating certain problems connected with affections of the heart.

DISCUSSION OF INFLUENZA AT CHICAGO MEETING.—At a recent meeting in Chicago of a committee appointed by the American Public Health Association, measures to be taken to stop the spread of influenza were discussed. No definite



conclusions concerning the cause and methods of fighting the disease were adopted. It was recommended, however, that non-essential gatherings should be prohibited and that the closing of schools should be left with local authorities.

The committee reported that the micro-organism, or virus, primarily responsible for this disease had not yet been identified, but that deaths resulting from influenza commonly are due to the development of pneumonia. It was stated that evidence as to the success of vaccines was contradictory and irreconcilable, as also was the evidence regarding the beneficial results from the use of masks. The report recommended the compulsory wearing of masks in hospitals and by barbers and dentists.

As methods of prevention the committee recommended "breaking the channels of communication by which the infective agent passes from one person to another, rendering persons exposed to infection immune or at least more resistant, by the use of vaccines, and by augmented healthfulness."

The report was signed by Dr. W. A. Evans, Chicago; Dr. D. B. Armstrong, Framingham, Mass., and Dr. W. C. Woodward, many years in Washington, D. C., but now of Boston.

**SURGEON GENERAL BLUE AGAIN ISSUES WARNING.**—Surgeon General Blue has again emphasized the danger of relaxing efforts to check the spread of influenza. He is reported to have said:

"The epidemic is not ended, and such recrudescences of cases and deaths as are now occurring in many localities may be expected to become more or less general. Any statement at the present time that the epidemic has come and gone for good can only do harm, for it will lull people into a false sense of security, and cause them to relax precautions."

**ARTHROMETRY, OR THE MEASUREMENT OF THE MOVEMENTS OF THE JOINTS.**—In restoring men who have been disabled in the war, the importance of accurate measurement of joint movement is becoming recognized. There has been published recently a pamphlet describing the measurement of the movement of the joints, by W. Wilbraham Falconer. Mr. Falconer has studied the problem of determining the mobility of the limb, and offers to those especially who are employing physical remedies for disabled men a description of his device for measuring

the arthrometer. The mensuration instruments at present employed are defective in that they are costly, the measurements they record are not strictly accurate, the process of working them is slow, and specially instructed measures are needed. Mr. Falconer's apparatus is extremely simple and can record the movement of all the principal joints in the body. This pamphlet includes instructions for the use of the arthrometer and arthrometrical charts.

**PUBLIC HEALTH SERVICE RESERVE FORCE.**—It is reported in a recent issue of *Science* that a permanent reserve force upon which the Public Health Service can draw in time of emergency such as that presented by the influenza epidemic has been authorized by the Congress. This consists of officers, none holding rank above that of assistant surgeon general, commissioned by the president for a period of five years, subject to call to active duty by the Surgeon General, U. S. P. H. S.

When in such active duty they receive the same pay and allowances as are now provided by law for the regular commissioned medical officers in the service. By far the larger part of the reserve to be organized under this act will be on active duty only during times of national emergency, though it will probably be necessary to establish periodic terms of training, so as to better fit the officers for such service. With the passing of the emergency these men will automatically go on the inactive list; always, however, subject to call to active duty by the surgeon-general. Detailed plans for the organization, training and assignment of the reserve officers are now under consideration.

**COMMITTEE FOR REHABILITATION OF DISABLED SOLDIERS.**—In a recent issue of *Science* it is reported that a permanent committee, comprising representatives of all the allied governments, has been appointed to centralize matters connected with the rehabilitation of disabled soldiers. The committee includes: Dr. Bourrillon (France), who serves as president of the committee; Dr. Mélis (Belgium), Sir Charles Nicholson (Great Britain), General Bradley (United States), L. March (France), Dr. Da Costa Ferreira (Portugal), and Agathonovitch (Serbia) as vice-presidents. All these hold high military rank. An institute for research has been founded at the headquarters of the committee which is already installed at 102 rue de Bac.



Paris. A review is to be issued by the committee. The editor in chief is Dr. Jean Camus, of the Paris Medical School, with Dr. Bourrilhon, the president of the committee, and Mr. C. Krug, the secretary general, as the board of directors for the publication. The work of the committee is to include the promulgation of the general principles for rehabilitation of the disabled, which each country can adapt to its own laws and customs; to group and centralize the data and the lessons learned from experience, and to apply them and aid in every way the mutilated and to extend this aid into the future after the war. By this coördination of efforts each one of the allied peoples will be able to profit by the improvements and achievements realized in any one of them.

**INFLUENZA SITUATION IN LONDON.**—The medical correspondent of the London *Times* has written the following article on the spread of influenza:

"A deal of nonsense has been written and spoken about the nature of the influenza condition. It may be admitted no certain conclusion has been reached. The influenza bacillus has been found with great regularity. In cases where empyema followed pneumonia, pure cultures of pneumococcus have been obtained. Some doubt exists still as to whether a new organism may not be implicated.

"It is not necessary to assume a new organism has been present to account for the great virulence of the epidemic. Bacteriologists long have known that epidemics vary greatly in severity and that their passage from post to post may augment the lethal power of the germ until such a degree of deadliness has been reached that death occurs within a few hours after infection, and before ordinary symptoms of disease—which largely are of the nature of a reaction—have time to develop.

"Many of these pneumonia cases had no pneumonia symptoms in the ordinary sense. That is to say, there was no consolidation of the lung. Infection was too severe, it spread beyond the lung to the blood itself, seeming to paralyze the normal methods of defence.

"When we come to the geographical course of the epidemic we find what seems like a confirmation of this view of augmented virulence. The epidemic began in Spain last summer. It was then mild with comparatively few deaths. In that form it spread through Europe, visiting

London in June. It was treated by the public as a joke, the victims soon recovering. The epidemic then reached America and in August and September we began to hear disquieting accounts. During these months it practically disappeared in London, but October saw the beginning of the return journey and the beginning of the present plague. As must be expected, the ports were involved first, Glasgow and Liverpool in particular suffering heavily a considerable time before other centers were affected. Next the disease reached London, to which, no doubt, it was brought by travelers on through trains. From London it radiated again, visiting Birmingham, Nottingham and other centers. It still is raging with full fury in the smaller country districts, which have now become involved."

The *Times* points out, also, that throughout the world about 6,000,000 persons have perished from influenza and pneumonia during the past six months. It has been estimated that the war caused the deaths of 20,000,000 persons in four and a half years. Thus influenza has proved itself five times more deadly than war, because in the same period, at its epidemic rate, influenza would have killed 100,000,000.

#### BOSTON AND MASSACHUSETTS.

**WEEK'S DEATH RATE IN BOSTON.**—During the week ending Dec. 21, 1918, the number of deaths reported was 334, against 235 last year, with a rate of 22.20, against 15.86 last year. There were 38 deaths under one year of age, against 34 last year.

The number of cases of principal reportable diseases were: diphtheria, 49; scarlet fever, 31; measles, 10; whooping cough, 13; typhoid fever, 2; tuberculosis, 55.

Included in the above, were the following cases of non-residents: diphtheria, 8; scarlet fever, 1; tuberculosis, 3.

Total deaths from these diseases were: diphtheria, 7; whooping cough, 2; typhoid fever, 1; tuberculosis, 21.

Included in the above, were the following non-residents: diphtheria, 1; tuberculosis, 1.

**COMFORT FUND NEARLY EXHAUSTED.**—The Convalescent Comfort Fund has distributed tobacco, cigarettes, chocolate, candy and fruit to the returning wounded soldiers of the following transports: Finland, Antigone, Pocahontas,

Aeolus, Kronland, Madawaska, Powhatan, Pastores, Princess Matoika, Mercury, Susquehanna, Huron, K. der Nederlanden, Rijndam, Martha Washington, Zeelandia and Tenadores. The fund is nearly exhausted, and additional contributions will be gratefully received.

**MEDICAL COMMITTEE NEEDS MORE FUNDS.**—The committee which has charge of the medical social work that is being done quietly but efficiently at the Boston City Hospital, is making an appeal for additional public support to that which has been given by an enthusiastic and philanthropic group of women during the past four years. In order to have a sufficiently large corps of workers to meet the fresh demand that is being made and to continue the follow-up work caused by the recent influenza epidemic, more money is needed.

Two of the important phases of the work done by this organization are helping the patients who are waiting to be discharged and the follow-up work so that the good already accomplished by the doctors and nurses may not be lost. This latter sometimes includes the furnishing of suitable clothing with which to leave the hospital, the furnishing of persons to accompany patients to their homes, or the providing of suitable conveyances, the rehabilitation of families stricken by an epidemic, proper care for recently orphaned children, the chronic care for mentally deranged persons.

More than 2000 persons have been cared for in these and in many other ways by this department during the past year, and during the past few months 250 sick and wounded soldiers have been in the City Hospital and many of them have been cared for by this department.

Donations for this work may be sent to the Old Colony Trust Company, for the medical-social work at the City Hospital, or to William C. Endicott, 71 Ames Building, Boston.

**GENERAL HOSPITAL NUMBER 10.**—Wounded soldiers from overseas are not expected at General Hospital Number 10 until after Christmas. At present, there are about twenty patients in the hospital. Of these, only two are men who have seen service in France and they were transferred to Boston from the hospital at Norfolk, to be treated for injuries accidentally received there. Because of a lack of help, preparations for the reception of a large number of patients has not been completed.

Apparatus is now being installed in the Robert

B. Brigham Hospital for use in the reconstruction work which will be done there. When this work is in progress, there will be facilities for teaching printing, carpentry, typewriting, and other occupations. The man whose injury prevents his return to the occupation which he followed before the war will be fitted for another if possible.

The general hospital will have a capacity of 650 patients as a minimum. More than that number may be accommodated in case of need. While the Metropolitan Chapter of the Red Cross has offered to transfer wounded men from the wharves or railroad stations to the hospital and the Army authorities will gladly use the Red Cross facilities if necessary, it is understood the hospital will be provided with a sufficient number of ambulances to handle all the cases likely to be received at one time.

**INFLUENZA AMONG ARMY MEN.**—Several cases of gripe have been reported to Northeastern Department army officers of men who are here on furlough from other points. Four men have been sent to hospitals.

At Camp Devens there are only 21 cases of influenza among the 30,000 troops in the camp.

On December 18, there were only three cases among army men reported.

On December 20, only one new case of influenza was reported in the army.

**MASSACHUSETTS SOCIETY FOR MENTAL HYGIENE.**—Annual conference to be held at Lorimer Hall (Tremont Temple), Boston, Thursday, Jan. 16, 1919.

Afternoon session, 3 P.M. General subject: Mental Hygiene, War and Education.

1. "The Need and Opportunity for Mental Hygiene as Shown by the War."

Speaker: Major Frankwood E. Williams, Medical Corps, U.S.A.

2. "The Need for Instruction in Mental Hygiene in Medical, Law, and Divinity Schools."

Speaker: H. Douglas Singer, M.D., State Alienist and Director of the Illinois State Psychopathic Institute.

3. "War Camp Community Service and Morale." Joseph Lee, President War Camp Community Service.

Evening session, 8 P.M. General subject: Mental Hygiene and the Education of the Young.

1. "Methods of Developing Mental Hygiene in the Public School." Arnold Gesell, Ph.D., Professor of Education, Yale University.

2. "Facts of Mental Hygiene that Teachers Ought to Know." Walter F. Dearborn, M.D., Professor of Education, Harvard University.

3. "Nervous Children and Their Training." C. MacFie Campbell, Professor of Psychiatry, Johns Hopkins University.

**WARNING ISSUED BY CITY HEALTH COMMISSIONER.**—The Boston Health Commissioner, Dr. William C. Woodward, has issued the following warning in the hope of checking somewhat the influenza-pneumonia contagion:

"Coughing, sneezing and even forcible talking are still looked upon as the most potent agencies through which influenza is spread. Coughing, sneezing and forcible talking in crowds whether indoors or out, unless safeguarded by the use of the handkerchief or other protective covering, must be looked upon as little more than assaults upon the assembled persons generally.

"Covering the mouth and nose with the handkerchief when coughing and sneezing tends to protect the public, but there is always danger that the cough or the sneeze will have occurred before the handkerchief is in place, or that mild coughs and sneezes will be disregarded.

"A forcible talker, however, is hardly in a position to protect his mouth during talking by the use of any protective covering.

"Holding one's hand before one's mouth or nose during talking, sneezing or coughing, may tend to limit the spread of infection by means of droplets, but it tends also to soil the hands, and thus tends to convey the infection to the next persons whose hands are taken.

"The moral is that coughers, sneezers and forcible talkers, especially if they have colds, are dangerous at best and should be excluded from crowded places rather than be left to protect by their own skill and agility in getting handkerchiefs or cloths before their faces before the cough or the sneeze takes place.

"The Health Department has prepared placards requesting coughers and sneezers to remain away from places of assembly and will display them as widely as possible throughout the city. Persons desiring such cards or placards for use about their own establishments will be furnished with them upon request."

**INFLUENZA REPORTS.**—New cases of influenza have increased the mortality in certain parts of the state, but the present outbreak is only about one-seventh as severe as the epidemic a few weeks ago, and health officials do not fear that another serious situation will develop.

The whole number of cases of influenza reported to the State Health Department for the week ending December 14 was 7802, and the deaths aggregated 99. The report for a twenty-

four hour period ending on December 14 shows 1203 cases and 14 deaths.

In Boston there were reported 60 new cases on December 15, 183 on December 16, with 12 deaths for each day. There was a decrease in cases of lobar pneumonia; 9 cases and 5 deaths were reported on December 15, and 4 cases, and 13 deaths on December 16. The highest point in new cases and deaths from influenza since the recurrence of the epidemic in Boston was reached on December 17, when 94 new cases (86 of influenza and 8 of pneumonia) and 21 deaths (10 of influenza and 11 of pneumonia) were reported.

Various local reports include the following number of cases: New Bedford, 70; Plymouth, 89 for 5 days; Taunton, 14; Brookline, 26; Easton, 20; Quincy, 29; Rockland, 24; Gloucester, 23; Haverhill, 47; Lynn, 57; Malden, 32; Belmont, 20; Lexington, 13; Waltham, 39; Winchester, 24; Framingham, 91 for several days; Natick, 24; Needham, 26; Worcester, 16; Boylston, 16; Fitchburg, 88; Gardner, 10; Conway, 30; Northampton, 23; Springfield, 118; Westfield, 25; Falmouth, 32; Brockton, 40; Cambridge, 57; Everett, 17; Newbury, 14 in 2 days; Lawrence, 17; Methuen, 23; Somerville, 21; Milford, 32 in 2 days; Newton, 27; Southbridge, 18; Holden, 36 in 9 days; Leominster, 19 in 3 days; East hampton, 33 in 2 days; Montague, 11 in 2 days; Pittsfield, 6; Fall River, 36; Milton, 38; Beverly, 23 for 2 days; Arlington, 15; Attleboro, 300 in 2 days.

On December 18, there were reported 2,105 new cases of influenza and pneumonia and 51 deaths in Massachusetts.

In Boston, for the twenty-four hours preceding 9 o'clock on the morning of December 18, 147 new cases of influenza and 19 cases of lobar pneumonia were reported, with a total of 12 deaths, 6 from each disease. Health Commissioner Woodward stated that he could only advise again the observance of simple health rules as the best means against infection. These are avoidance of overexertion, and taking plenty of sleep and fresh air and exercise.

The following reports were sent to the Department of Health on December 18, from various towns and cities:

Barnstable, 46; Fall River, 78; New Bedford, 74; Plymouth, 45 in 6 days; Brockton, 74; Brookline, 63; Cambridge, 31; Rockland, 68; Everett, 22; Gloucester, 16; Haverhill, 27; Malden, 60; Concord, 50 in 8

days; Lawrence, 22; Lexington, 23; Lowell, 27; Methuen, 28 in 2 days; Somerville, 23; Waltham, 107; Woburn, 33; Charlton, 26; Framingham, 40 in 3 days; Milford, 12; Natick, 21, and 2 deaths; Newton, 25; Southbridge, 18; Worcester, 93; Fitchburg, 6; Templeton, 31; Northampton, 29, and 5 deaths in two days; Westfield, 18; Pittsfield, 10; Lynn, 96; Springfield, 218, and 8 deaths; Hatfield, 225 since October 24; Chat ham, 125 since November 26; Andover, 82 for 5 days; Adams, 26 for 7 days; Falmouth, 49; Middleboro, 12; Provincetown, 28; Braintree, 82 in 4 days; Bridgewater, 22; Brockton, 77; Easton, 18; Hanover, 15; Quincy, 18; Salem, 19; Newton, 79; Charlton, 24; Worcester, 36; Leominster, 22; Townsend, 28; Monson, 34; Greenfield, 23.

A slight recurrence of the influenza epidemic has apparently developed in Quincy, Rockland, and Attleboro, but the reappearance of the disease is considered by medical officials as no more than the wake of a big wave which, broadly speaking, passed all over Massachusetts. In Quincy, 70 cases are reported. In Holbrook, the Sumner high school has been closed. There have been 60 cases in the school and 150 cases in the town, and in some of these pneumonia has developed. 250 cases have been reported from Abington and 500 from Whitman. Schools have been closed in Attleboro, and 25 new cases have been reported.

In Gloucester, the public schools will remain closed until after the Christmas vacation. 31 cases have recently developed, but there have been only 2 deaths, indicating that the situation is much less serious than in last September and October.

The public schools in Marblehead were closed on December 19 because of the illness of many of the teachers and pupils. They will be reopened on December 30. Only a few cases of influenza have been reported, but colds are prevalent.

On December 19, the State Department of Health recorded for a twenty-four hour period 1912 new cases of influenza and 31 deaths. Reports from various cities and towns show that Springfield had 61 cases and 11 deaths; Fall River, 29; Falmouth, 46; Taunton, 11; Brockton, 41; Brookline, 29; Cambridge, 64; Hanover, 21 in 2 days; Rockland, 20; Chelsea, 24 in 2 days; Everett, 22; Haverhill, 34; Lynn, 35; Malden, 33; Melrose, 28; Merrimac, 23; Peabody, 20 in 2 days; Lawrence, 12; Lexington, 23; Lowell, 12; Somerville, 21; Waltham, 102; Newton, 71;

Worcester, 49; Fitchburg, 33; Leominster, 52 in 2 days; Holyoke, 122 in 2 days; Westfield, 22.

On December 19, the health report for Boston and the vicinity showed an increase in the number of cases of influenza and pneumonia. There were 168 new cases and 15 deaths from influenza and 10 new cases of lobar pneumonia and five deaths from this cause.

Reports of influenza cases received on December 20 show the following figures: Brookline, 63; Cambridge, 31; Malden, 60; Somerville, 23; Waltham, 107; Woburn, 23; Newton, 25; Lynn, 96; Barnstable, 46; Fall River, 78; New Bedford, 74 cases and 5 deaths; Plymouth, 45 cases in 6 days; Brockton, 74; Rockland, 68; Gloucester, 16; Haverhill, 21; Concord, 50 in 8 days; Lawrence, 22; Lexington, 23; Lowell, 27; Methuen, 28 in 2 days; Charlton, 26; Framingham, 40 in three days; Milford, 12; Natick, 21 cases and 2 deaths; Southbridge, 18; Worcester, 93; Fitchburg, 6; Templeton, 31; Northampton, 29 cases and 5 deaths in 2 days; Westfield, 18 cases; Pittsfield, 10.

**INFLUENZA IN SPRINGFIELD.**—In the state as a whole, Springfield continues to be the heaviest sufferer, reporting 218 new cases and 8 deaths with 24 hours. With about 70 of the local physicians now in United States service in this country or abroad, the calls made upon those remaining have been so severe that the board of health sent a request yesterday to the war department, that a part of them be released to meet home needs.

**STATE AND CITY COÖPERATE IN COMBATING INFLUENZA.**—With 1912 new cases of influenza and 31 deaths reported in Massachusetts in 24 hours, Boston having an increase in mortality and cases, Gov. McCall and Mayor Peters yesterday recalled their emergency health committees, appointed during the earlier epidemic, and asked them to consider whether a renewal of the precautionary measures taken to combat the original outbreak would be necessary.

Mayor Peters's committee voted to send out a call for nurses' aids, asking candidates to register with the Instructive District Nursing Association, 561 Massachusetts avenue.

Healthy, intelligent women, able to carry out the plain instructions of physicians and willing to assist in ordinary care of households are wanted to serve in families unable to pay.

City Health Commissioner Woodward declares that death certificates filed show that many



cases of influenza are not being reported by physicians as required by law.

The mayor's committee voted to concentrate influenza cases, so far as possible, in a single hospital. In case this plan fails, it will be necessary to appeal to hospitals generally to limit their other cases to those in acute need of hospital care and prepare to receive influenza cases. The committee recognizes the prevailing preference for home treatment, but emphasizes the need for increased care in such cases, and is prepared to placard houses with influenza cases in which instructions for the protection of others are disregarded.

Commissioner Woodward emphasizes the importance of people sleeping alone as a precaution, particularly when there are symptoms of a cold, and recommends that every doubtful case be regarded as influenza. He advises the avoidance of crowds and crowded conveyances, recommends walking to work whenever possible and urges that people do their shopping during the less crowded hours.

Both the Governor and the Mayor agree that all reasonable steps should be taken without delay, even at the expense of limiting Christmas programs. In Boston the question of closing theatres, churches and schools will be for the emergency committee to decide.

The use of masks by persons in attendance on influenza cases, and the frequent washing of the hands, are again urged on the public. Circulars instructing the public about taking precautions are being sent out.

The new cases of the malady in Boston during the present week have averaged more than 150 a day.

Physicians as a rule do not believe that the situation will offer the health problem that the earlier epidemic did, as the majority of the cases are less virulent. As persons more than 40 years of age are less susceptible than younger persons nurses past 40 years old are desired in preference to younger ones. The thorough cleansing of hands and eating utensils is considered of the greatest importance, also the isolation of suspects, and of people with colds remaining at home.

Members of the state emergency committee are requested by the Governor to report to Dr. Eugene R. Kelley, state commissioner, and Surg.-Gen. William C. Brooks, who will discuss with them methods of combating the new outbreak.

**EMERGENCY HEALTH COMMITTEE WILL NOT BE REASSEMBLED.**—After a conference on December 20 with Dr. Eugene R. Kelley, State Commissioner of Health, Governor McCall announced that there would be no reassembling of the Emergency Health Committee, and expressed his confidence that the State Health Department is capable of meeting the situation caused by the reappearance of influenza. On December 19 the Governor issued a call for a meeting of the Emergency Health Committee created under the Public Safety Committee when the grip epidemic was prevalent, to take such steps as might be necessary to prevent a virulent recurrence of the disease.

The State Health Department has kept its organization intact during the time since the disease was most severe. It has kept in touch with the War Department constantly and secured the release of doctors as fast as possible in order that they may be available in this state. It has kept its organization of nurses complete and in a state of thorough, efficient organization. Accordingly, the Governor feels that further organization is not necessary, and the statement is given out from the executive department that nothing will be done in the way of additional committee work.

Dr. John S. Hitchcock, director of the Division of Communicable Diseases, reports that there is still need for nurses, but not for doctors. The present outbreak of influenza, while serious, has not presented the cause for alarm which was justified by the previous epidemic. Serious cases are reported, but it is also true that hundreds of cases are reported as influenza which are not influenza.

Dr. Hitchcock says that the Department has no information regarding the new vaccine used in the Navy Department. The Department has sent a circular to the local board of health, saying that local outbreaks of lessened virulence may be expected for some time and urging them to keep in touch with the local relief committee.

#### NEW ENGLAND NOTE.

**INFLUENZA IN PORTLAND, MAINE.**—On December 18 and December 19, 142 new cases of influenza were reported in Portland, Me. As a preventive measure toward keeping the fortifications in the Portland Coast Artillery free of the disease, orders have been issued to keep the soldiers within the limits of their posts. None of the 2,000 men on duty there have the disease.



### Miscellany.

#### WORK OF THE MASSACHUSETTS ASSOCIATED CHARITIES.

The review of the year's work of the Associated Charities of Massachusetts summarizes the unusual demands during the winter's severe weather, the coal shortage, the coöperation with the Red Cross, the measures taken during the influenza epidemic, legislative interests, and sources of help to the society. The society has no general relief fund, but the secretaries frequently secure money for individual families. Last year this sum reached \$55,943, and came in some instances from employers or relatives or churches; in others from various funds or relief societies, or from public-spirited citizens interested in individual need. Of this amount \$30,674 was spent in regular allowances for persons too old or too ill to assume their own support. The rest provided for special medical care or nourishment following illness, for vacations to tired mothers, education for promising boys and girls, or it helped to tide some families over emergencies. All this is apart from the regular expense for service to beneficiaries.

The society used its influence in urging the passage of the bill which makes it possible to erect the third school for feeble-minded at Belchertown. Its interest in the bills providing for the extension of continuation schools in the cities and towns of Massachusetts and physical education for school children led to the special study of 151 children in industry who were between the ages of 16 and 14.

One hundred more volunteers are needed as friendly visitors in service to families, of whom there were 3,417 enrolled last year. At least \$54,000 is needed in contributions to pay for service to them and to the community.

#### MASSACHUSETTS HOSPITALS FOR CONSUMPTIVES.

The eleventh annual report of the Massachusetts Hospitals for Consumptives is a record of the excellent work which has been accomplished in this State during 1917. Three hundred ninety-three thousand, four hundred and forty-two days of treatment were provided for 1,789 patients. In order to facilitate the control of tuberculosis in the State, arrangements have been made for the construction of new county

tuberculosis hospitals. This plan will make it possible to reserve the Rutland, North Reading, Lakeville, and Westfield State sanatoria for favorable cases of pulmonary tuberculosis and will leave local hospitals the function of caring for consumptives in advanced stages.

The Lowell tuberculosis hospital and the tuberculosis ward of the Anna Jacques Hospital at Newburyport have been nearly completed. Two hospitals, the Everett Tuberculosis Hospital and the tuberculosis ward of the Waltham General Hospital have been closed.

Employment has been offered by the sanatoria to discharged patients who are adapted to the work. At North Reading Sanatorium, 17 have been employed; at Westfield, 59; at Lakeville, 15; at Rutland, 169.

The educational work carried on by the State has been increased; many letters touching on every phase of the tuberculosis question have been written to physicians, patients and their friends, and anti-tuberculosis workers, not only in Massachusetts, but all over the country.

#### PREVENTION OF INFLUENZA.

UNDER date of December 21, 1917, the following circular letter was issued by Dr. William C. Woodward, to the profession of Boston:

Like many other cities, Boston is apparently destined to suffer a secondary influenza epidemic. The amount of sickness and number of deaths resulting therefrom will depend largely upon the extent to which our people themselves can be induced to avoid unnecessary contact with others who may be sources of infection and to take personal precautions when necessarily called on to come in contact with the sick.

Reporting.—In accordance with Section 50 of Chapter 75 of the Revised Laws of the Commonwealth, the State Department of Health has declared influenza to be a disease dangerous to the public health, and since October 4, 1918, has required physicians to notify local boards of health of all cases which may come to the knowledge of physicians, under the penalty provided in the statute for failure to do so. The death certificates filed at this office daily show, however, that many cases of influenza are not being reported by physicians as they are required to do by laws of the State.

**Coöperation to Prevent Influenza.**—Besides calling your attention to your legal obligation to report at once every case of influenza which may come to your knowledge, this department desires to urge you both as a professional and civic duty to give this department your active coöperation in efforts to save lives in this city by trying in every practicable way to prevent the possible spread of infection of the disease. To this end you are requested to give the following your earnest consideration.

**Colds to be Treated as Influenza.**—There is no known method, laboratory or otherwise, by which an attack of influenza can be differentiated from an ordinary cold or bronchitis. Supposed ordinary, mild colds are undoubtedly an important factor in the spread of influenza. In instances of uncertainty of diagnosis, therefore, it would seem that the interests of the community at the present time demand that every doubtful case be regarded as a case of influenza—at least in so far as isolation, etc., are concerned, if not for purpose of reporting.

**Sleep Alone.**—Like most contact diseases, a case of influenza is most contagious in the beginning, and many lives would be saved this winter if everyone could be prevailed upon to sleep alone. Any symptoms suggestive of a cold should be regarded in any event as a sufficient reason for insisting not only on a separate bed but a separate room.

**Channels of Infection.**—Evidence seems conclusive that the infective micro-organism or virus of influenza is given off from the nose and mouth of infected persons, and must gain access to the nose, mouth or throat of a susceptible person in order to transmit the disease. Droplet infection, the spraying of the infective agent into the air in the immediate vicinity of the infectious person, through his coughing, sneezing or talking, and soiled fingers or directly contaminated food or eating or drinking utensils may for all practical purposes be regarded as the means of transmitting the disease.

**Infection Through Soiled Eating Utensils and Soiled Hands.**—In giving instructions in a family, the advisability of boiling the eating and drinking utensils of the patients, and of washing the hands of members of the family other than the patient, immediately before eating, should not be overlooked.

**Masks.**—Masks, properly used, are to be advised for those in immediate attendance upon the sick or necessarily in the sick room.

**Selection of Nurses.**—Persons over 40 years of age seem less susceptible to influenza than those between 20 and 40. This fact should be considered when choice of an attendant for the sick in a household is possible.

**Hospital Treatment vs. Home Treatment.**—Home treatment is to be preferred. It may be contraindicated by the absence of medical or nursing care or other necessary facilities in the home, or by the absence of adequate accommodations for the isolation of the patient. With respect to patients suffering from mild attacks hospitalization may result in cross-infection that would not otherwise occur. The objection to hospitalization in the case of the patient seriously ill lies in the danger to the patient incident to removal.

**Isolation of Suspects.**—It is highly desirable at this time that persons who are coughing or sneezing be kept out of street cars, offices, factories, shops, or elsewhere where people come in close contact. Physicians will perform a public service if they can prevail upon such persons to stay at home.

**Placarding.**—This department is prepared to placard houses where persons suffering from influenza disregard instructions for the protection of others.

**Crowded Cars, Stores, etc.**—Crowded public conveyances are a serious menace to public health, and physicians are requested, whenever they can, to induce persons to walk at least a part of the distance, in going to and from work. Shopping should be done at times when stores are least crowded. Unnecessary visits to crowded places of amusement should be avoided, and patronage given in any case only to places that are clean and well ventilated.

**Educational Literature, etc.**—There are inclosed circulars relating to influenza and the making of masks, with a view, subject to your approval, to distribution in the families of your patients. If additional copies be desired they will be sent you on application. Circulars will soon be available in Italian and Yiddish.

If the Health Department can coöperate with you in any way—either with respect to the safeguarding of your patients suffering from influenza, and their families, or otherwise—it will be glad to do so.

## Correspondence.

## AN UNUSUAL SEQUELA OF INFLUENZA.

France, 1918.

Mr. Editor:

During a recent epidemic of influenza a small number of cases (five of those under my care) has had a sequela of which, in the literature available, I can find no mention.

The first man in whom it was seen had recovered from his acute symptoms—high fever and general malaise—two days before, when he suddenly complained of sharp pains in his left upper quadrant. His physical examination was entirely negative, and I came to the conclusion that he was "swinging the lead" and sent him to a convalescent camp the next day. Shortly after this I, myself, was attacked by the germ and, on the afternoon of the day on which I considered myself well I began to have very sharp rhythmic pains in the left upper quadrant, coming at short, regular intervals and lasting a few seconds at a time, exacerbated by deep inspirations but appearing even when I remained perfectly quiet and did not breathe at all. The pains resembled in their intensity those caused by stretching of smooth muscle. At the end of about five hours they became less severe and less frequent and gradually died away.

I was not examined physically, but since I recovered I have had three more cases whose history and story resembled mine, and whose examination was negative save for very slight tenderness over the spleen. The spleen was not palpable, there was no spasm of the abdominal muscles, and lung examination revealed nothing.

LIEUT. PAUL R. WITHERINGTON, M.D.

## LIST OF PHYSICIANS ENGAGED IN INDUSTRIAL PRACTICE.

Harrisburg, Pa., Dec. 23, 1918.

Mr. Editor:

Will you kindly call attention in the next issue of your JOURNAL to the fact that Dr. Francis D. Patterson, Chief, Division of Industrial Hygiene and Engineering, Department of Labor and Industry, Harrisburg, Pa., is desirous of obtaining a complete list of all physicians engaged in the practice of industrial medicine?

It has been the practice of this Department to hold semi-annual conferences of industrial physicians and surgeons, for several years. These conferences are well attended and a great deal of valuable matter is presented in the discussions. In order to reach all physicians interested, it is desirable to have their names upon our mailing list. The next conference will be held early in 1919 and it is, therefore, essential that the names and addresses of all industrial physicians and surgeons be in my hands as soon as possible after January first.

Expressing to you my deep appreciation for your courtesy in calling this matter to the attention of your readers, I am,

Very sincerely yours,

FRANCIS D. PATTERSON,  
Chief, Division of Hygiene.

## RECENT DEATHS.

DR. CHARLES WHITNEY HADDOCK died on December 13, at his home in Beverly. Dr. Haddock was born in Beverly, June 3, 1856. He studied at the Harvard Medical School from which he was graduated in the class of '79. Dr. Haddock had been ophthalmologist and otologist at the Beverly Hospital and a special examiner at the United States Pension Department and medical examiner for the Seventh district, Essex County. He was a member of the Massachusetts Medical Society, from which he resigned in June, 1916, and of the American Medical Association.

DR. WILLIAM HOBNUYT BUTLER, a Fellow of the Massachusetts Medical Society, died at Fall River, on October 11, 1918, at the age of 51.

DR. EDWIN E. JONES, of North Stratford, N. H., was killed in an automobile accident on December 23. He was born in London in 1870. In 1894 he was graduated from the Dartmouth Medical School. He practised in Norwich, Vt., and in Concord, and later established a hospital in Colebrook.

DR. HENRY G. BEYER died recently in Washington, D. C. He was born in Saxony in 1860. He came to this country and served for 36 years as medical director of the Navy, from which he retired six years ago. For three years he was fleet surgeon of the Pacific Fleet. He was a delegate to the International Congress in 1907, and was president of the Military, Naval and Tropical Departments five years later.

MAJOR JOSEPH B. BISSELL died recently at the age of fifty-nine at his home in New York. He was born in Lakerville, Connecticut. He was a graduate of Yale University, took his degree in medicine at Columbia, and later studied at Munich and Vienna. Before the United States entered the war, Major Bissell went to England to instruct surgeons in the use of radium for infected wounds. At the time of his death, he was radium expert and chief surgeon at Fort McHenry, Baltimore.

DR. JOSEPH A. MARIN died on December 7, at his home in Holyoke, after a week's illness with pneumonia. Dr. Marin was born at St. Pie, P. Q., and graduated from St. Hyacinthe College in 1885. Later he entered Laval College where he completed his medical course. He then went to Holyoke where he was a practicing physician for 29 years. He was active in politics and served as alderman-at-large in 1899 and 1900. In 1902 he was elected city physician and appointed a member of the board of health.

DR. WILLIAM TURNER PARSONS died at the age of thirty-seven on November 30. The cause of his death was pneumonia. Dr. Parsons was born in Oswego, New York. He completed his studies at Johns Hopkins University, Baltimore. He specialized in diseases of the eye, ear, nose, and throat, and for two years was instructor of pathology in Johns Hopkins University. For several years he practised in Washington and later in Palmer. He was a member of the American College of Surgeons and the American Medical Association.

DR. DONALD H. CURRIE, surgeon of the United States Public Health Service, port physician of Boston, and regarded as probably the foremost authority on leprosy in America, died recently of pneumonia, following an attack of influenza, at the Contagious Hospital in Brookline. Dr. Currie was educated in public and private schools in St. Louis and received his degree in medicine from the University of St. Louis. He practised a full year as interne after being admitted to practice, and then, in 1899, joined the United States Marine Hospital service. At that time he was only 23 years old, and was one of the youngest men—if not the youngest—at the time in the marine medical service. He served in Honolulu on two separate medico-military assignments and later was stationed at San Francisco. He later was assigned to serve in the United States Laboratory in Washington. Six years ago Dr. Currie was sent back to Honolulu in charge of the Molle leper colony there. Coming East, he was assigned to the United States Marine Hospital here and served also on Gallups Island. Dr. Currie assisted in stamping out the bubonic plague in San Francisco and in the yellow fever epidemic in New Orleans. In 1906 he was selected as the United States representative to the leprosy congress in Bergen, Norway.